REVISED MARCH 1963

SHEPHARD-WINTERS CO.

Manufacturers' Representative
3193 CAHUENGA BOULEVARD
HOLLYWOOD 28, CALIF

HO 6-2171

Amperex°

ELECTRON TUBES

Por h



Price

AMPEREX ELECTRONIC CORPORATION • 230 DUFFY AVE., HICKSVILLE, L. I., N. Y.

FOREWORD

This condensed catalog has been compiled for those in the engineering field who seek the proper tubes to suit their applications. It is also intended to serve as a quick reference guide for initial equipment as well as for replacement purposes.

Detailed data sheets on the various tubes listed in this catalog are available upon request.

A condensed semiconductor brochure is also available upon request.

A detailed engineering Transmitting and Power Tube Manual giving complete tube characteristics and application data is available to engineers at the nominal cost of \$5.50.

The Semiconductor Manual contains detailed data concerning Amperex transistors, diodes and photo-sensitive devices, and is available at \$5.50. The Amperex Special Purpose Tube Manual includes complete information concerning entertainment and industrial tubes (including reliable and rugged types), cold cathode tubes, miniature tubes, tuning indicators and permanent sensitivity radiation counter tubes and is available at a cost of \$5.50. The Nuclear Products Manual covering neutron detectors, thermocoax products, GM counter tubes and photomultiplier tubes is also available at \$5.50.

AMPEREX is always interested in quoting on all tube and semiconductor requirements. Our research, development and manufacturing facilities are such that we welcome inquiries on new products.

AMPEREX ELECTRONIC CORPORATION

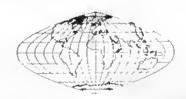


TABLE OF CONTENTS

	Page
Power Tubes	. 2
Tetrodes & Pentodes	. 2
Triodes	. 4
Thyratrons	- 10
Hydrogen	- 10
Mercury Vapor & Inert Gas - Triodes & Tetrodes	. 10
Subminiature Tubes (Screen Grid Types)	. 12
Entertainment & Audio Tubes	. 12
Tuning Indicator Tubes	. 18
Premium Quality Tubes	. 18
Premium Quality, 10,000 Hour Tubes	. 20
UHF Special Purpose Tubes	. 22
Radiation Counter Tubes (Permanent Sensitivity)	. 24
Neutron Detectors	. 28
Rectifier Diodes	. 30
Microwave Triodes	. 30
Photomultiplier Tubes	. 30
Counting, Selecting & Indicating Tubes	. 32
Traveling Wave Tubes	. 33
Cold Cathode Trigger Tubes	. 34
Ignitrons	. 34
Klystrons	. 34
Voltage Reference & Regulator Tubes	. 35
Magnetrons	. 35
Index	. 36,37

POWER TUBES - TETRODES & PENTODES

	FILA	MENT	Mu	Max.		PLATE	YPICAL OF		ID.	SCREEN
TYPE NO.		T	Grid #1	Diss. Watts	16 10		0.4504	Valts	MA	Volts
	Volts	Amps	Grid *2	n dirs	Valtz DC	Amps DC	Output Watts	DC	DC	DC
4-65A	6	3,5	5	65	3,000	0,115	280	-100	5	400
4CX250B	6	2.6	5.2	250	2,000	0,250	390	-90	26	250
(all ceramic) 4CX250F (all ceramic)	26,5	0,56								
4W300B	6.0	2.9	5.2	300	2,000		390	-	_	
W300BF										
4X150A	6.0	2.6	5	250	1,250	0, 200	140	-115	11	280
4X150D	26.5	0.58								
X250B ceramie)	6.0	2.6	5, 2	250	2,000	0, 2 50	390	-90	26	250
4X250F (ceramic)	26.5	0.56								
4X500A	5.0	13.5	6.2	500	4,000	0.315	930	-150	16	500
4-125A/4D21	5.0	6,5	5.9	125	2,500	0,200	375	- 150	12	350
4-250A/5D22	5,0	14.5	5.1	250	4,000	0.312	1,000	-225	90	500
1-400A	5,0	14.5	5. 1	400	4,000	0.350	1,100	-220	18	500
607	6.3	0.9	8	25	600	0.100	40	-45	4	250
813	10	5	8.5	125	2,000	0.18	275	-120	10	400
828	10	3.25	_	70	1,250	0,160	150	-95	15	400
329B	12.6	1.125 2.25	. 9	30	750	0.120	65	-50	8	200
5894	12.6 6.3	0.9	8.2	CCS=40 ICAS=45	CCS=600 ICAS=750	0.200	CCS=85 iCAS=105	-80	5	250
5895	6.3 3.15	10.68 1,36	7,5	CCS=12 ICAS=16	600	0.8	33.6	-80	2.6	200
5075	6.3	33.5 33.5	7.5 7.5	3,000	4,000 5,000	1.10	3,300 4,100	-250 -250	70 70	800 800
6076	6, 3	33.5	7.5	3,000	4,000	1.10	3,390	-250 -250	70 70	800
5079	10.0	9.7	7.5 9.5	500	5,000	0.452	1,760	-200	30	700
5083	12.6	1,35	6.7	45	1,000	0.017	132	-120	5	250
5146	6.3	1.25	4.5	CCS=20 ICAS=25	600 7.50	0.112 0.12	52 70	-58 -62	2.8 3.1	150 160
6155	5.0	6.5	6.2	125	2,500	0.200	375	-150	10	350
		1000								
156	5.0	(4.1	5. L	250	3,000	0.345	800	-180	10	500
6159	26.5	0,3	4, 5	CCS=20 ICAS=25	500 750	0,112 0,12	52 70	-58 -62	2.8 3.1	150 160
6252	12,6 6,3	0.65	8.5	CCS=20 ICAS=25	600 750	0, 100 0, 150	42 79	-60 -60	1.4	250 250
6252 USN										

•	MAX, FREQ.	CAPACI		$-\mu\mu f$	DESCRIPTION	TYPE NO.
	Full Input Watts	G.P	G.F	P.F		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	150	0,08	8	2.1	Convection and radiation cooled tetrode having a fast heating thoriated lungsten filament. Excellent for mobile use,	4-65A
	For :			4.5	Forced-air cooled external anode letrodes with binzed ratiator, For mirborne and mobile applications extending into the UHF region. Also excellent for single sideband and pulse applications.	4CX25013 (a11 ceramic 4CX250F (a11 cciamic
	500	0.06	17. 2	5.0	External anode tetrode electrically identical to 4X250B. Anode is water cooled. Designed for applications in which reserve anode dis-	4W30013
					sipation is desirable.	4W300BF
	500	0,03	16	4,4	Forced-air cooled external anode tetrode. Suited for high power mobile applications, Makes an excellent wide-band amplifier for video ap-	4X150A
					plication.	4X150D
	500 0		15.7	4.5	Forced air cooled external anode tetrodes with brazed radiator. For authorne and mobile applications extending into the UHF region. Also excellent for single sideband and pulse applications.	4X250B (cetamic) 4X250F
	120 0.05		12.8	5.6	Foreed-nit choled external anode tetroile. Useful as power amplifier	(ceramic) 4X500A
	120	0.05	10,8	3, 1	in FM, TV and VIII communication transmitters. Radiation and forced air cooled tetrode. Designed for use as power	4-125A/4D21
	110	0, 12	12.7	4.5	amplifier, modulator or oscillator, Radiation and forced-air cooled tetrode. Designed for use as RF	
	powe			power amplifier, modulator or oscillator.	4-250A/5D22	
		legins		4. 7	Radiation and forced-nit cooled tetroile. Designed for use as power amplifier, modulator or oscillator at frequencies up to 110 mc.	4-400A
	60	0.2	11,0	7.0 Radiation-cooted tetrode, Popular replacement as well as for equipment,		807
	120 0,25		16.3	14	Beam power pentode designed for use as an RF amplifier and oscillator.	813
		0,07	12	14	Beam nower pentade for use as AF, RF amplifier, modulator	828
	250	0,12	14.5	7.0	Twin-pentode designed for use in push-pull RF amplifier and oscillator applications.	829B
	250	0.08	Input Output (Pusi	6, 7 2, 1 5, Pul1)	Rudiution and/or forced-air cooled twin-tetrode of original Amperex design as HF versum of conventional 829-B. Makes ideal multiplier, as well as straight amplifier and modulator.	5894
	186	0.05	Input Output (Push	5. 7 1. 7 • Pull)	Radiation cooled twin, four electrode tube. Designed for use as a radio frequency power amplifier, oscillator, modulator and frequency multiplier. This tube features a directly heated cathode, making it suitable for instant heating applications.	5895
	220 75	_	24.0 24.0	8. 5 8. 5	Water-cooled low drive, HF tetrode drangued for FM and television transmitter power amplifier.	6075
	220 75	0, 2	24.0 24.0	8. 5 8. 5	Forced air cooled external anode version of 6075/AX9907	607fi
	75	0.24	Input Output	25 7. 2	Radiation and/or forced-air cooled low drive HF tetrode for FM and AM transmitters. Also ideal in screen modulator stages,	6079
	60	0, 1	22, 5	11.0	Radiation-cooled pentode with low voltage - high current characteristics. Powder glass dish type base with short internal lead connections. Up to 150 watts, Class C Telephony, ICAS,	6083
	60	0.22	13. 5	8.5	Beam power tube for use as RF power amplifier, oscillator, frequency multiplier, AF power amplifier or modulator for mobile and fixed equipment. Anode expuble of dissipating 25 watts ICAS.	6146
	120	0.05	10.8	3.5	Convection and forcest air cooled tetrode. "Magnisorb" anode and low drive make it excellent RF amplifier tube in FM broadcasting, Improved version of 4.125A/4D21.	6155
	7.5	0.12	12. 7	4.5	Convection and forced air cooled tetrode. "Magnisorb" anode and low drive characteristics with "sintered" glass base. Improved version of 4-250A/5D22.	G156
	60	0. 22	13.5	8.5	Beam power tetrode for use as RF power amplifier, usefliator fre- guency multiplier, AF power amplifier or modulator for fixed and mobile equipment.	6159
	300	_	Input Outpot	4, 0 1, 3	Radiation and/or forced-air cooled twin tetrode of Amperex design. HF version of conventional 832A. Makes ideal multiplier as well as straight amplifier and modulator. Useful up to 700 me at icduced	6252

POWER TUBES - TETRODES & PENTODES (Continued)

	FILA	MENT	Мш	Max.		- '	YPICAL O	FERAII	14		
TYPE NO.			Grid #1	Diss.		PLATE		G!	RID	SCREEN	
	Volts	Amps	Grid #2	Watts	Volts DC	Amos DC	Output Wolls	Volts DC	MA DC	Volts DC	
6360	12.6	0.410	7.5	CCS=10	300	0.100	1CAS	-45	3	200	U.
6360 A	6.3	0.820		ICAS=14			18.5				
6883	12.6	0.625	4.5	CCS=20 1CAS=25	600 750	0.112 0.120	52 70	· 58 -62	2.8 3.1	150 160	
6907	12.6 6.3	0.65	8.5	CCS=20 ICAS=25	600 750	0.100 0.150	42 79	-60 -60	1.4	250 250	
6939	12.6	0.3 0.6	31	CCS=6 1CAS=7.5	180 200	2x.027 2x.030	5.8	-20 -20	0.75 0.75	180 200	
6979	6,0	2.6	5	250	2,000	0.250	410	.90	12	250	
7377	12.6	0,3 0,6	28	8	250	0,035	7	-15	0.75	160	
7580	6	2,6	4	250	2,000	0,250	360	-250	50	400	
7378	6.3	3,9	5. 7	100	750	0.385	200	- 90	7 10	250	
7527	5	14. [5. 1	400	4,050	0.270	800	-170	9.5	500	
7609	26.5	0, 57	5	250	1,250	0.200	140	-115	10	280	-1
7645	6.3 12.6	0,6	31	CCS=5.5 1CAS=7	180	0,04	4.2	-20	.6	180	
7854	12.6	0.9 1.8	8.2	60	1,000	0.200	134	-85	5. 4	250	- •
7983	3.15	1,65	7,5	7	300	0.55	i 1	-40	1.5	155	
8042	1.6	3.2	4.5	25	650	0.160	65	-71	2.8	180	
8116	26.5 13.25	0,433 0,866	7	2×30	1,000	2x0.110 2x0,131	141 P.E.P.	-34	0	250	
8117	12.6 6.3	0.9	7	2x30	1,000	2x0.131	141 P.E.P.	-34	0	250	
8177	4	60	9	1200	3,110	0.8	1,280	-300	10	510	
8179	7.5	22.6	5.1	800	5,500	0.6	1,300	-500	0	800	

POWER TUBES - TRIODES

					MAX.				
FILAMENT		Mu	Mox.	PLATE			GF	FREQ.	
Valts	Amps		Watts	Valis DC	Amps DC	Output Walls	Volta DC	MA DC	Full Input Watts
11	4	18	150	2,000	0.200	300	-250	23	30
11	4	18	150	200	0.200	300	-250	23	30
11.0	4	23	200	3,000	0.250	600	-400	28	20
	11 11	11 4	Mu Volts Amps	Mu Diss. Watts 11 4 18 150 11 4 18 150	Mu Diss. Volts DC	FILAMENT Max. PLATE	FILAMENT Max. PLATE	Mu Diss. PLATE Grant Grant Watts Valts DC DC Watts DC DC Watts DC DC Watts DC DC DC DC DC DC DC D	FILAMENT

	MAX. FREQ.		RELECTI		DESCRIPTION	TYPE NO
713	Full Input Watts	G-P	G-F	P.F		
	200	<0.1	Input Output	6.2 2.6	High-gain twin tetrode for use as Class C amplifier, oscillator, frequency multiplier and modulator, ICAS plate input = 30 watts up to	6360
	60 0.22 13.5 8.5			8, 5	Beau prower tube for use as RF power amplifier, oscillator, frequency multiplier, AF power amplifier or modulator for mobile and fixed equipment. Anode capable of dissipating 25 watts 1CAS.	6360 A 6883
	300	-	loput Output	4, 0 1, 3	Twin tetrode, radiation-cooled. Special Amperex design for mobile service, HF version of coovectional 832A. Ideal multiplier & straight amplifier & modulator. Useful up to 1000 mc. Delivers 15 watts at 600 mc, CCS.	6907
	500	2x0, 15	2x6,4	2x1.6	High-gain twin tetrode for use as Class C amplifier, oscillator, frequeocy multiplier & modulator. ICAS plate input = 14 wat1s up to 500 mc. Capable of delivering 7.5 watts output at 500 mc.	6939
	250	0.03	15.7	4,5	Forced air cooled external anode tetrode. Brazed radiator, loter- changeable with 4X150A where higher plate dissipation is required,	6979
	960	0.145	4. 5	t. 35	Radratioo cooled twio tetrode designed for push-pull Class C operation at frequencies up to 1000 Mc.	7377
	500	0.03	17	4.5	Forced-air cooled, beam power tetrode built of ceramic and metal, especially for SSB and other linear RF amplifier applications at altitudes to 20,000 ft.	7580
	30	0, 9	_	_	Radiation and convection cooled all-glass beam-power tetrode espe- cially designed for use as an AF and Rt amplifier, oscillator, and frequency a ultiplier for operation at frequencies up to 30 mc.	7378
	110	0.12	12.7	4,4	All glass tetrode. Designed for amplifier, oscillator, or modulator service extending in the VIIF region at frequencies up to 110 mc.	7527
	500	0.03	Input Outpui	15, 5 4, 5	A retrode designed for use as an RF power amplifier and oscillator. The place is forced air cooled; the cathode is oxide coated, indirectly heated. Similar to 4X150D except that it is designed for aircraft use and other applications in which resistance to vibration is important.	7609
2	400	0, 15	6.4	1.6	Miniature twin tetrode featuring frame grid construction. It is a reduced height version of the 6939 for compact equipment.	7645
	175	0.09	Ingrai Outgrut	11. 6 3. 7	Twin tetrode. Designed for use as an RF power amplifier, oscillator, modulator and frequency multiplier. Heat sink or lorced alr cooling is necessary at or near maximum ratings. Hulli-in cross neutralizing capacitors insure neutralization over entire band. Useful to 500 mc.	7854
	200	0,08	6.8	3.2	Quick healing twin letrode having a filiment designed for hybrid mobile transceivers for power output, driver or frequency multiplier circuits. Internally neutralized up to 200 mc	7983
	_	0,24	13	8, 5	"'llarp Calhode" instant heating beam power tetrode for use as power output, oscillator or frequency multiplier in mobile or base equipment. Full output power is available in less than one half second after filament power is applied.	8042
	175	0.09	11.8 Input	3, 7 Output	Twin tetrode designed and raied for SSI3 applications where 26.5 v is available for heater. Parlicularly adapted to heat sink cooling because of calibrated glass envelope.	8116
	175	0, 09	11,8 Input	3.7 Output	Twin tetrode designed and rated for SSB applications where 12.6 v is available for the heater.	8117
	900	0.15	46	6	Ceramic coaxial power tetrode useful as a UNF amplifier or oscillajor up to 1000 me.	8177
	30	0, 1	47	9.5	Radiation and/or air-cooled tetrode for use as an AM or SSB amplifier. Features low distortion,	8179

		RELECT		OESCRIPTION	TYPE NO.
	G.P	G.F	P.F		TIPE NO.
0	6, 9	6.2	1,2	Rudiation-cooled triode for use as an RF power amplifier, oscillator and class B audio amplifier or modulator.	HF200
	7.0	8.8	1.2	Radiation cooled triode especially designed for use as an AF and RF amplifier and oscillator.	HF201A
	7, tl	6.0	1,0	Radrutioo-cooled triode. Ideatly suited for initial replacement of competitive types. Widely used ro RF hearing applications, and commercial, and police transmitters.	HF300

POWER TUBES - TRIODES (Continued)

	FILAN	AENT				TTPIC	AL OPERA	LIION		MAX.	
TYPE NO.			44	Mox.		PLATE		GR	ID	FREQ.	
TIPE NO.	Volts	Amps	Мυ	Diss. Watts	Volts DC	Amps DC	Dutput Watts	Volts DC	MA DC	Full Input Watts	4
ZB3200	22.0	40.5	75	2,500	8,000	0.960	5,800	-400	150	10	•
356	7.5	170	20	22,500	15,000	4.4	51,000	-1500	0.37	25	
502	7.5	24	17	1,500	3,500	0.860	2,175	-450	150	150	
502R	7.5	24	17	1,500	3,500	0.860	2,175	-450	150	150	
504R	7.5	24	17	1,000	3,500	0.860	2,175	-750	150	150	
805	10	3.25		125	1,500	0.2	215	- 105	0, 04	30	
810	10	4.5	36	125	2,000	0.250	375	-1 60	40	100	
811A	6.3	4	160	45	1,250	0.140	135	-50	45	100	
812A	6.3	4	29	45	1,250	0.140	130	-90	30	100	
834	7.5	3.25	10.5	50	1,250	0. 1	75	- 225	0.015	100	
838	10	3.25		100	1,250	0.175	130	-90	0.03	30	
845	10	3.25		75	1,250	0, 2 Peak	105	-225			
B33A	10.0	10.0	35	400	4,000	0.450	1,440	-200	75	30	
849	11.0	5	19	500	2,500	0.350	630	-250	13	3	
849A	11.0	7.7	19	500	3,000	0.500	1,200	-500	100	20	4
880	12.6	320	20	20,000	10,000	6.0	40,000	-1200	800	25	
889A	11.0	125	21	5,000	7,500	2.0	10,000	-800	240	50	
889RA	11.0	125	21	5,000	7,500	2.0	10,000	-800	240	25	
891	22.0	60.0	8	6,000	10,000	1.45	10,000	-3000	150	1,6	
891R	22.0	60.0	8	4,000	10,000	1.4	10,000	-2000	150	1.6	
892	22.0	60.0	50	10,000	12,000	1.55	14,250	-1600	165	1.6	
892R	22.0	60.0	50	4,000	10,000	1,40	10,500	-1300	160	1.6	
5604	11.0	176.0	19	10,000	12,000	2.5	22,500	-1170	220	22.5	
5619	11.0	176.0	19	20,000	12,000	2.5	22,500	-1170	220	22.5	
5658	12.0	290.0	20.5	10,000	10,000	3.8	28,000	-870	550	15	
\$666	11.0	120.0	21	12,500	9,000	2.0	12,200	-750	210	22.5	
5667	11.0	120.0	21	7,500	9,000	2.0	12,200	-750	210	22.5	
5759/501R	7.5	24	17	1,000	3,500	0.870	2,175	-250	133	150	
5771	7.5	170	20	22,500	12,500	4.8	44,000	-630	750	25	
5866	6.3	5.4	25	135	2,500	0.200	390	-300	45	150	
7986											
5867	5,0	14.1	25	250	3,000	0.363	840	-250	69	100	
5867 A											
5868	10.0	10.0	27	450	4,000	0.475	1,673	-350	100	100	-
5923	12.6	33,0	32	6,000	6,000	1.5	6,900	-400	310	75	4
5924	12.6	33.0	32	5,000	6,000	1.5	b,900	-400	310	75	
	12.6	33.0	32		CLASS B.	TV SERV	ICE, SYNC.	LEVEL		75	

		RELECTI		DESCRIPTION	TURE
	G.P	G.F	P.F	DESCRIPTION	TYPE NO
•	10.0	13.0	2.0	Forced-air cooled triode. Original Amperex design. 5.8 kw output at 10 mc with zero bias. Used principally in broadcasting.	ZB3200
	24.5	35	2.5	Water-cooled tube for use as a modulator amplifier or oscillator. Suited for broadcast, communication or industrial service.	356
	10	14	1.3	Water-cooled Iriode for use as a power amplifier and oscillator,	502
	10	14.	, 1.3	Forced air cooled triode. Ideal power amplifier and oscillator. Has a thoristed tungsien filament	502R
	10.5	14.0	1.3	Forced air cooled triode similar to Amperex 501R minus flexible leads, Interchangeable with 7C26 with very minor circuit changes,	504R
	6.5	8.5	10.5	High mu tube for use as an RF amplifier, oscillator, and class B AF amplifier.	805
	4,8	8.7	12	Transmitting Iriode designed for use as RF power amplifier and oscil- lator Irinal amplifier stage.	810
	5.6	5.9	0.7	Power triode designed for use as an RF power amplifier, modulator and oscillator	811A
	5. 5	5.4	0.77	Power triode designed for use as an RF amplifier, modulator and self-reclifying oscillator.	812 A
	2.6	2.2	0.6	A radiation cooled RF oscillator and amplifier intended for replacement service.	834
	8	6.5	.5	A zero bias class B AF power amplifier, RF oscillator or power amplifier,	838
	13.5	6	6.5	Class A and class AB modulator.	845
	6r. 3	12,3	8.5	Raduation and forced-air cooled triode used widely in AM transmitters and also some RF heating applications. (Refer to 5868/AX9902 data).	833A
	33.0	11.0	2.0	Radiation and forced-air cooled triode, Still popular as replacement in some AM irroadcust transmitters and RF healing.	849
	t1.5	14.0	1.8	Same information as whose, interelectrode capacitance different.	849A
	2n.0	29.0	2. fr	Water-gooled triode. This rugged "powerhouse" very popular in broadcasting stations and ideal for RF heating applications.	880
	17.8	19.5	3,0	Water-cooled triode. Another rugged high power RF lube for broadcasting stations and RF heating applications.	889A
	20 7	19.5	3.0	Forced-air cooled triods version of 889 A, with improved radiator design.	889RA
	28.0	16.0	3.0	Water-cooled trrode. This is one of the tubes that built Amprerex reputation. Used in 5 and 10 kw broadcasting stations. Also popular in RF heating.	891
	30.0	16.0	3.0	Forend-air cooled version of 891.	891R
	32.0	17.0	1,8	Water cooled triode. Widely used all over the world in broadcasting stations. Also another ideal RF heating lube, Also see 6333 improved version.	892
	32,0	17.0	2.0	Forced-air cooled version of 892. Also see 6445 improved version.	892R
	25.0	30.0	1,25	Forced-sir coaled triode, Ideal oscillator for RF healing and broadcasting service,	5604
	24.0	30.0	1.0	Water-cooled version of 5604.	5619
	24.0	39.0	2.5	Industrial witter-cooled version of type 880.	5658
	18.0	23.5	2.6	Water-cooled triods, Heavy duty version of 889 A for industrial RV heating application.	5666
	18.5	23.5	3.0	Forced-air couled triode, Heavy duty version of 889 RA for industrial RF heating apprication.	5667
	10.0	14.0	1.3	Forced-air cooled triode. Low voltage, high correct characteristics. Ideat for RF heating. Has a thoristed-innesten fitament.	5759/501R
	24.5	47.0	3.0	Improved version of 880 with thorialed-tungsten litament for high emission capability and a saving of 70% in frament power. Has rugged Kovar grid and fitament seals. For industrial & communication application.	5771
	5.5	5.8	0,1	Radiation and/or forced-air cooled ttF triode of original Amperex design. Powdered glass dish-type base with extremety low lead inductance makes this	5866 7986
	5.0	6.3	0.16	the ideally sorted for almost any HF application. Radiation and/or forced-urr cooled HF low drive triode of original Amperex design.	5867
	0	0.5	0.10	Transfer and, or Coreca an Educa in 10w difer tribute of original Amperex design.	5867 A
	8.0	11.0	0, 35	Radiation and/or forced-air cooled HF triode with ragged 100 watt filament. Of original Amperex design, for all heavy duty RF apptications.	5868
	11.0	16.0	0.3	Water-cooted low drive HF triode. Ringged for HF heating application.	5923
	11.0	16.0	0.3	Forced-an cooled version of type 5923	5924
	11.0	16.0	0.3	Forced arr cooled trrode for FM & TV transmitters. Brazed radiator shell & external surfaces silverplated throughout.	5924A

	FILAN	ENT				TYPIC	AL OPER	RATION		MAX.	
TYRENA	1154	NEW!		Max.		PLATE		GR	21D	FREQ.	
TYPE NO.	Volts	Amps	Mυ	Diss. Watts	Volts DC	Amp# DC	Dutput Watts	Yolts DC	MA	Full Input Watts	
6077	17.5	196	27	50,000	12,000	12	108 kw	-1000	2.25 Amps	15	
6078	17.5	196	27	45,000	12,000	12	108 k w	-1000	2.25 Amps	15	
6333	22.0	60.0	50	10,000	12,000	1,55	14,250	-1600	165	5	
b445	22,0	60.0	50	5,000	10,000	1.40	10,500	-1300	160	5	_
6446	22.0	60.0	50	20,000	15,000	2.0	20,000	-1250	250	s	
6447	22.0	60,0	50	10,000	12,000	2.0	17,500	-500	230	5	
6617	8.0	98	34	20,000	12,000	3.2	29,000	·1500	500	30	
6618	8.0	98	34	15,000	12,000	4.5	39,000	-1000	800	30	
6756	7,5	100	13,5	20,000	12,000	3.5	30,640	-1220	210	30	
6757	7.5	100	13.5	15,000	12,000	3,5	30,640	·1220	210	30	
6758	12.6	33	9	6,000	7, 000	1, 72	6,000	-820	82	30	
6759	12.6	33	9	6,000	7,000	1.72	6,000	-820	82	30	
6800	7.5	100	19.5	20,000	12,500	3.5	33,000	-1200	250	22,5	
6801	7.5	107	19.5	10,000	12,500	3.0	28,000	-1200	430	22.5	-
6960	12.6	33	32	6,000	6,500	2.0	10,000	-450	600	55	
6961	12.6	33	32	6,000	6,500	2,0	10,000	-450	600	55	
7092	6,3	32.5	22	800 1,300 ¹	6,000 6,000	0.600 0.950	2,840 4,400	-450 -475	150 190	50	
7237	12.6	33	32	6,000	6,500	2,0	10,000	-450	600	55	_
7459	12.6	30	32	4,000	6,000	1.5	6,900	-400	310	110	
7753	6.3	65	5	2,100	6,000	1.33	4,750	Grid Bjas	380	50	_
		130	33					Res. 1450Ω			
7800	8			15,000	13,000	4.8	40,000	-1500	1 Amp	30	_
7804	6, 3	130	17,5	CCS= 10,000	6, 000	3.3	14,300		800	30	
7805	6, 3	130	17.5	15,000	6,000	3.3	14,300		800	30	
7806	. 8	130	21	15,000	12,000	4.5	39,300	_	900	30	
7807	8	130	21	15,000	12,000	4.5	39, 300		900	30	
7899	8	130	33	8,500	15,000	70	200,000	-500	15 Amps		
7900	12.6	32	32	4,000	4,500	1,75 (sync.)	5,600 (sync,)	-130	350 (sync.)	220	
8078	5	32.5	21	500	6,000	0.70	3,200	-1250	170	50	
8119	3.4	19	33	400	2,000	0.400	510 + 85	-140	120	900	
8120	3.4	19.0	70	500	2,500	0.38	620 ± 50	-70	160	400	
8268	12.6	33	24	6,000	7,200	1.5	7, 500	-1250	360	50	
8269	12.6	33	24	6,000	7,200	1.5	7,500	1250	360	50	
							1	1	(1	

^{1 50%} duty cycle.

		RELECTI		DESCRIPTION	TYPE NO.		
	G.P	G.F	P.F	DESCRIPTION .	TIPE NO.		
•	86	116	3.4	Water cooled RF power amplifier, oscillator and modulator having a plate dissipation of 45 kw in class C service. The anode can dissipate up to 100 kw in class B RF operation. Useful at reduced ratings to 30 mc.	6077		
	86	116	3.4	Forced-air cooled power amplifier, oscillator and modulator having a plate dissipation of 45 km. Operates at reduced ratings up to 30 mc. Ideal for julse applications.	6078		
	32.0	17.0	1.8	Improved ruggedized version of standard 892 with spiral filament, Kovar seals, powdered glass stem, Grid side arm deleted and replaced with Kovar ring, Excellent industrial tube for heavy duty, also communication.	6333		
	32.0	17.0	1,8	Forced-air cooled version of type 6333. See above,	6445		
	32.0	17.0	1.8	improved, ruggedized, heavy-wall version of type 892. Ilas powdered glass stem, Kovar grid ring, Kovar anode scal, stronger spiral filament giving more uniform heat distribution over anode surface. Also has strong conical, low-inductance grid sumport. An unusual industrial tube without equal.	6446		
	32.0	17.0	t.8	Forced-air cooled version of type 6446. See above.	6447		
	30	37	0.4	Water-cooled triode for use in industrial HF generators.	6617		
	30	37	0.5	Forced-air cooled triode for use as a high power RF amplifier and oscillator.	6618		
	47.6	25.1	1,5	Water-cooted triode with special characteristics as a low impedance, RF industrial oscillator. Particularly suited to induction and dielectric heating applications.	6756		
	50,0	25.1	2,0	Porced-air choled version of type 6756.	6757		
	14	12	1.0	Water-cooled low impedance RF industrial oscillator.	6758		
	15	12	2	Forced air cooled triode designed for use as a low impedance RF in- dustrial oscillator. The anode can dissipate up to 6 KW.	6759		
	26.0	25.0	1,0	Thoriated tungsten friamentary triode, 20 kw anode dissipation, Water-cooled, High power RF amplifier and industrial oscillator.	6800		
	27.0	25.0	1.25		6801		
	11.0	16.0	0.3	Industrial water-cooled triode with large overload capacity on grid and plate currents. Suitable for 7.5 kw induction and dielectric heaters and 10 kw plastic sealers.	6960		
	11.0	16.0	0.3	Forced-air cuoled version of 6960, Suitable for 7.5 kw induction and dielectric heaters and 10 kw plastic sealers.	6961		
	6.2,	10,5	0,25	Radintion-cooled triode for industrial oscillator and amplifier applications. Rugged construction, Graphite anode with unusual overload capability. Theriated tungsten filament,	7092		
	11.0	16.0	0.3	Identical with Amperex Type 6961 except with radiator design intended for Inter- changeability with competitive types 6366 and 6367.	7237		
	11	16	0.3	Forced-air cooled triode designed for use in broadcast FM & TV communication transmitters. It will replace the 5762/7C24 in most applications.	7459		
	7.2	13	<0.5	Forced-air cooled, high vacuum power triode of the external plate type. Designed for use as an oscillator in industrial equipment.	7753		
	27	45	0.6	Forced-air cooted triode, Designed for communication and industrial service. Also useful as pulse amplifier and hard tube modulator to 200 kw peak.	7800		
	40	40	1.0	l'orced-air zooied externat anode triode. Designed for use as an oscillator in in- dustrial equipment. Large guid and plate overload capabilities.	7804		
	40	40	1.0	Water-cooled version of 7804.	7805		
	23.5	42.5	0.9	Same as for 7804.	7806		
	23.5	42.5	0.9	Water-cooled version of 7806.	7807		
	18.0	17.0	0.6	Designed for pulse application as a hard tube modulator. Forced-air cooled.	7899		
	-		0.3	Forced air cooled triode. Designed for TV transmitter operation to 220 mc, Features brazed and silver plated radiator for high efficiency.	7900		
	5.1	9.2	0.2	Radiation cooled triode designed especially for industrial oscillator and amplifier applications.	8119		
	6.5	11.5	<0.12	Forced-air cooled, coaxial transmitting triode with a ceramic envelope designed for use in IIF amplifier, oscillator, or frequency multiplier operation at frequencies up to 900 mc.			
	3,8	1 t	0.05	Forced-air cooled transmitting triode with ceramic envelope and coaxial terminat arrangement. Can be used as 'plug-in' in coaxial circuits. Designed for use as an RF amptifier, oscillator or frequency multiplier at frequencies up to 1000 mc.	8120		
	7. 9	14.2	1	Water cooled triode intended for use in industrial RF heating generators.	8268		
	7. 9	14.2	1	Forced air cooled triode designed for use in industrial RF heating generators.	8269		

THYRATRONS-HYDROGEN

TYPE NO.	Peak Forward Anode Valtage Max.	Peak Anode Current Max. (Amps)	Avg. Anade Current Max. (ma)	Pulse Width Max.
4C35	8,000	90	100	2 μsec.
5C22	16,000	325	200	2 μ sec.
6268	8,000	90	100	2 μ sec
6279	16,000	325	200	2 μ sec

THYRATRONS-MERCURY VAPOR & INERT GAS-TRIODES & TETRODES

	HEAT	ER OR	Filament		PEAK V	OLTAGE	ANODE	CURRENT		lanization
TYPE NO.		MENT	Heating Time (sec.)	Tube Drop (Valts)	Forward Valts	invaras Volta	Peak Amps	Average Amps	Max. Grid Volts	Time (µ sec.)
AX105	5.0	10.0	300	16	10000	10000	8.0	4.0	-500	10
XX255	5.0	16,0	300	12	1500	2500	80.0	12.5	-300	10
XX260	5,0	25.0	600	10	1500	2500	160.0	25.0	-300	10
PD21	6,3	0.6	10	8	650	1300	0,5	0,1	-100	0.5
3C23	2.5	7	15	15	1250	1250	6	1.5	-500	3
532B	5	5	300	12	1500	1500	30	2.5	-300	10
2050	6.3	0.6	10	8	650	1300	1.0		250	. 5
5544	2.5	12.0	60	16	1500	1500	40.0	3.2	-250	-
5545	2, 5	21.0	60	16	1500	1500	80.0	6,4	-250	_
5557/1701	2,5	5.0	5	16	2500	5000	1.0	0,5	-500	10
55.59	5.0	4.5	300	16	1000	1500	15.0	2.5	-500	10
5560/FG95	5.0	4.5	300	16	1000	1000	15.0	2.5	-1000	10
6632 / C3J	2.5	8.5	60	10	900	1250	30.0	2.5	-300	10
5684/C3JA	2.5	8.5	60	10	1000	1250	30.0	2.5	~300	10
5685/C6JA	2.5	21	60	9	1000	1250	77.	6.4	-100	-
57 27	6.3	0.6	10	8	650	1300	0.5	0.1	-100	0.5
5869/AGR9950	5.0	6,5	120	15	13000	13000	4.0	1.0	- 100	10
5870/AGR9951	5.0	14.0	120	12	27000	27000	10.0	2.5	-100	10
5786	5.0	15-20	600	12	15000	15000	45.0	10-15		-
8270	5	13	90	12	21000	21000	10	2.5	_300	10

	DESCRIPTION	
•	These tubes are used as drivers for pulsing magnetrons and other oscillators and as high speed switches. Hydrogen-fitted, they have extremety tow de-ionization time. They are zero bias tubes, triggered by a positive grid pulse. Maximum pulse repetition frequency (prf in pulses per second) will depend on the peak forward anode voltage (epy in volts) according to formula: (epy) x (prf) = 2.6 x 10 t max.	TYPE NO.
	See 6268.	4C35
	See 6279.	5C22
	Completely interchangeable with 4C35 in every respect except that it has self-contained source of hydrogen providing life expectancy of minimum 1000 hours.	6268
	Completely interchangeable with 5C22 in every respect except that it has self-contained source of hydrogen providing life expectancy of minimum 1000 hours.	6279

Delon- ization Time (μ sec.)	Condensed Mercury Temp. Range (°C)	DESCRIPTION	TYPE NO.
1000	+40° to +80°	Radiation-cooled mercury-vapor thyratron-tetrode.	AX105
1000	+35° to +75°	lleavy-duty, mercury vapor thyratron for motor control and A.C. welder control.	AX255
1000	+35° to +75°	Heavy-duty, mercury vapor thyratron for motor control and A.C. welder control.	AX260
-84-	-	High controt ratio, temperature independent Thyratron with high circuit sensi- tivity. Inert gas filted. Negative control characteristics.	2D21
360	-40° to +80°	Gas and mercury triode,	3C23
1000	+45° to +50°	Mercury vapor tetrode for ignitor firing and grid-controlled rectifier service	63217
50	-	Gas tetrode for relay service.	2050
400	_	Xenon fitted thyratron with reliable operation over wide temperature range. For electronic control of D.C. motor speed, regulation of current and voltage, counting and sorting devices and electronic switching machines.	5544
500	_	Same as for type 5544 above,	5545
1000	+30° to +80°	Radiation-cooled mercury-vapor low voltage thyratron. Similar In structure to 866 A.	5557/1701
1000	+40° to +75°	Indirectly heated, mercury-wapor triode with negative control characteristics.	5559
1000	+40° to +80°	Four electrode, mercury vapor thyratron with negative control characteristics. Designed for applications where the available grid power 1s very small and where it is desired to actuate the grid from a high impedance source.	5560/FG95
1000	- tur	Xenon filled, three-etectrode thyratron with negative-control characteristics for reliable operation over wide temperature range. Especially suitable for control relay service, motor control, and ignitor firing service.	5632/C3J
1000	_	Xenon filled, three-electrode thyratron with negative-control characteristics for reliable operation over wide temperature range. Especially suitable for control relay service, motor control, and ignitor firing service.	5684/C3JA
1000	_	A gas filled triode for applications requiring precise control.	5685/C6JA
35 min.		Ruggedized version of 2D21. Particularly suitable for mobile and aircraft operation where mechanical strength and reliability are important. Designed for relay, servo control applications, etc.	5727
250	+25° to +55°	Radiation-cooted mercury-wapor thyratron. Oxide coated filament. Used for stepless control of voltage output and D-C motor control.	5869/AGR9950
250	+30° to +45°	Same as above for type 5869/AGR9950,	5870/AGR9951
_	+25° to +55°	ttigh voltage, grid controlled mercury vapor thyratron. For industrial RF generators and transmitting equipment.	6786
500	125° to +45°	Grid controlled mercury vapor thyratron.	8270

SUBMINIATURE TUBES (SCREEN GRID TYPES)

	FILA	MENT	CAPA	CITANCES	$\mu\mu^{f}$	PI	LATE			PLATE	
TYPE NO.	D-C Volts	Current	G-P	Input	Output	Volts	Diss. Milliwatts	Grid No. 1 Volts	Grid No. 2 Volts	Micro. Amps	Resist- once Megohms
6007/5913	1. 25	13.3	0, 2	2.5	2,2	45	25	-0, 2	45	475	0.4
6008/5911	0.625	13, 3	0.2		1,5	45	1.5	-0.2	45	50	0,4

ENTERTAINMENT & AUDIO TUBES

	E	MENT	TYPICA	L OPER	ATING	CONDIT	IONS AN	D CHAP	RACTER	ISTICS	
TYPE NO.	2A 1.4 0.55 R5 2.1 0.6 Y5 2.4 0.6 K5 2.3 0.6 A5 2.2 0.6 17/XF183 3.4 0.6 17/XF184 3.4 0.6 R5 2.8 0.45 Y5 3.1 0.45 K5 2.8 0.45 A5 3.1 0.45 A5 3.1 0.45 A5 3.1 0.45 A7/YF184 4.4 0.45 7/YF184 4.4 0.45 7/YF184 4.4 0.45 A 0.6 A 0	MENI		Ap	plied Val	toges	Plote	Screen	Amplifi.	Plate Resist.	
	Voite	Amps	Circuit Application	Plote	Screen	Grid	Current (mo)	Current (ma)	Fector	Once (Kohms)	
152A	1,4	0.55	Peak Inverse 22,000 (absolu					Plote C 40 ma			
2ER5	2.1	0.6	VHF Triode for TV luners	200	_	-1.2	10.0	-	80	-	
2FY5	2.4	0.6	VHF Triode for TV luners	13.5	-	-4.5	11.0	-	70	_	
2GK5	2.3	0.6	VHF Triode	135	_	-1	11	-	70	5.2	
2HA5	2.2	0.6	RF Amplifier triode	200	-	-5.7	11.5	-	72	5.6	
3EH7/XF183	3,4	0.6	1F Amptrfier	200	90	-2	12	4.5	_	500	
3EJ7/XF184	3,4	0,6	IF Amplifier	200	200	.2,5	10	4.1	60	350	
3ER5	2.8	0.45	RF Amplifier triode	200	_	-1.2	10.0	-	80	-	
3F Y5	3.1	0,45	RF Amplifier triode	135	-	4.5	11.0	-	70	-	
3GK5	2.8	0.45	VHF Triode	135	_	-1	11	_	70	5.2	
3HA5	3.1	0.45	RF Amplifier triode	200	-	-5.7	11.5	_	72	5.6	
4EI17/YF183	4.4	0.45	1F Amplifier	250	250	-1.3	10.0	-1, 1	60	350	
4EJ7/YF184	4.4	0.45	IF Amptifier	200	200	-2.5	10	4.1	60	350	
4ES8	4.2	0.6	Low Noise Cascode RF Amplifier	90	_	+1, 2	15	-	34	2.72	
4GJ7	4,3	0.6	TV oscillator mixer: Triode-Pentode	100 170	- 120	-3 -1.2	15 10	- 3.0	_ 20	_ >350	
4GK5	4.0	0,6	VIIF Triode	135	-	-1	11	_	70	5.2	
4HA5	3.8	0.3	RF Amplifrer triode	200	_	-5.7	11.5	_	72	5.6	
5AR4/GZ34	5.0	1.9	Full Wave Rectifier	DC Ou	tput Curr	rent (max. Condense	te) Voltaş) r İnput F		= 250 = 60	550 volts ma µf volts dc	
5ES8	5.6	0.45	Cascode AGC Controlled RF Amplifier	90	_	-1,4	15.0	_	34	2.5	
5GJ7	5.7	0.45	Pentode-Triode Oscmixer for TV applications	170 100	120	-1. 2 -3	10 15	3.0 —	_ 20	>350	•
6AJ8	6.3	0.3	General purpose Triode-Heplode	250 250	100	0 -2	13, 5 6, 5	 3.8	22 20	33	
6AL3/EY88	6.3	1.55		Peak in		naxinum	Peak as		Average current 2		

Trans- conductance Micromhas	Output Milliwatts	DESCRIPTION	TYPE NO.
420	6	Radiation-cooled pentode oulput amplifier for hearing aids and other purposes, where small size, light weight and low battery drain are important. An ideal tube for receivers.	6007/5913
100	2. 25	Same as above except this tube is a voltage amplifier.	6008/5911

	Trans. conduct. once (microm- hos)	Max. Power Output — 2 Tubes, Push. Pull Class B	Lood Resist- once (K ohms)	Cur-Off Blac (volts)	DESCRIPTION	TYPE NO
				•	Miniature half-wave vacuum rectifier designed for use in high voltage, low current applications in TV scanning systems.	1S2A
	10,500	- General Control of C	-	_	Miniature frame grid shielded triode with remote cut-off, Low noise figure at 220 Mc. Operates at low supply voltages. Controlled warm-up for 600 ma series string operation.	2ER5
	13,000	-	790	-	Frame grid shielded triode with remote cut-off, for low supply voltages. Controlled warm-up for 600 ma series string operation,	2FY5
	13,000	_		-4.2	A high gain frame grid VHF triode for series operation.	2GK5
	14,500	_	-	-	Ampliframe sheilded triode for TV RF amplifiers. High slage gain, low noise figure, low interelectrode capacitance,	2HA5
_	12,500	-	_	_	See 6EH7 designed for warm up series string operation.	3EH7/XF183
.	15,000	-		-	See 6EJ7 designed for warm-up series string operation.	3EJ7/XF184
•	10,500	_	-	-	Frame grid sheilded triode with remote cut-off and low noise figure. For use in VHF tuners with low supply voltages, Controlled warm-up for 450 ma aeries string operation.	3ER5
	13,000	_	_	_	Minrature frame grid shielded triode with remote cut-off. Designed for VHF tuners in television receivers. Low noise figure at 220 Mc and operates at low supply voltages.	3F Y5
	13,000	_	_	-4.2	A high gain frame grid VHF triode for 450 ma series string operation.	3GK5
	14,500	_	_	-	Ampliframe shielded triode for TV RF amplifiers. High stage gain, low noise figure and low interelectrode capacitances.	3HA5
	15,000	-		~-	Frame grid remote cut-off pentode designed for use as an IF amplifier in television receivers.	4EH7/YF183
	15,000			-	See 6EJ7 designed for warm-up series string operation.	4EJ7/YF184
	12,500	-	_	_	High performance frame-grid twin-triode with remote cut-off character- istres. Designed for use as a low noise cascode tube for 600 mA series string operation in premium TV timers.	4ES8
	11,000	-	_	_	Ampliframe triode pentode designed for operation as an oscillator mixer in television applications. Stable oscillator performance at low line voltage. Controlled warm-up for 600 ma series string operation.	4G57
	13,000	-	_	-4.2	A high gain frame grid VIIF triode for series operation.	4GK5
	14,500	-	_	_	Ampliframe shielded triode for TV RF amplifrers. Controlled warm-up for 450 ma series string operation.	4HA5
					Indirectly heated, lull-wave receilrer with 5.0 volt, 1.9 amp heater and 250 ms output capacity. Octal base.	5AR4/GZ34
	12,500	_	_	-	High performance, frame grid triode with remote cut-off characteristics. Designed for use as low noise cascode tube in premium TV tuners.	5ES8
	11,000	_	_	_	Ampliframe triode pentode for operation as an oscillator mixer in television applications. Has stable oscillator performance even at low line voltages. Controlled warm-up for 450 ma series string operation.	5GJ7
	650 2,400	_	_	_	Triode-heptode designed for use in AM, FM and television receivers.	6AJ8
					Booster diode designed for application in horizontal circuits in TV receivers.	6AL3/EY88

	F(I A	MENT	TYPICAL	L OPERA	TING (LONDITI	AN ENO	D CHAR	ACIER	12 1167	
TYPE NO.		MEIVI	Circuit Application	Арр	lied Vol	tages	Plate Current	Screen Current	Amplifi-	Plate Resist.	
	Volts	Amps	Citati Application	Plate	Screen	Grid	(m o)	(ma)	Factor	(K ohms)	
6AL5	6.3	0.3	Full Wave Rectifier	117 ac rms (per plate)	_	_	Output Current 9dc (per plate)	Plale	n Total E Supply 1m 300 ohm	pedance	
6AL5W	6.3	0.3	Ratio detector Dual Diode	_	_	-	9 (per plate)	Plale		l Effective Impedance ims.	
6AQ8/ECC85	6.3	0.435	RF Amplifier and Mixer	RF Amp 230	_	-2.0	10.0	-	57	9.7	
				Mixer 190	-	ı	5.2	_	57	2.2	
6AT6	6.3	0.3	Duo Diode High Mu Triode	250	- {	-3	1	-		58	
6AV6	6.3	0.3	Duo Diode High Mu Triode	250	_	·2	1.2	_	100	62	
6 A U6	6.3	0.3	RF-IF Amplifier: Triode	250	Plate	_	12.2	_	36	-	
			RF-IF Amplifier: Pentode	250	150	6.5	10.6	4.3	36	1000	
6BA6	6.3	0.3	Remote cut-off RF Amplifier for broadcast receivers	250	100	- 1	11	4.2		1 meg.	
6BE6	6,3	0.3	Frequency Convertor for broadcast receivers	250	Eg 2-4 100	Eg 3 -1.5	2,9	Ig 2.4 6.8	_	1 meg	
6BL8/ECF80	6,3	0.43	AM/FM Oscillator	170	170	.2	10	2.8	471	400	
			Mixer	100	_	.2	14	-	20	4	
6BM8/ECL82	6.3	0.78	Valtage Amplifier & Power Output Tube	V.Amp. 100 Output	170	0 -11.5	3.5	9.0	70	28.0	
6BQ5/EL84	6.3	0.76	Power Output Tube	300	300	-14.5	2 x 46	2 x 11	-	-	
6BX6/EF80	6.3	0.3	RF-IF Amplifier	250	250	-3.5	10	2.8	50	65	
6CA4/EZ81	6.3	1.0	Full Wave Rectifier	DC Max	Output C	! Plate-to-P urrent (ma ty Conden 'oltage	(. x		= 15 = 50		
6CA7/EL34	6.3	1.5	Power Output Tube	800	400	-39	2 x 91	2 x 19	_	-	
6CM4	6.3	0.017	UIIF Triorle	175	<u> </u>	-1.5	12	<u> </u>			
6CW5/EL86	6.3	0.76	Medium Power Hi-Fi Amplifiers	250	200	-18.5	70	170	8	23	
6DA6/EF89	6.3	0.2	RF-IF Pentode	250	100	-1.95	9	3		900	
6DC8/EBF89	6.3	0.30	AM detector and AGC RF or	200	-		0.8	-		_	
			IF Amplifier	250	100	2.0	9	2.7	20	1000	
ed18/ECC88	6.3	0.365	Cascode RF Amplifier Mixer	90	-	-1.3	15.0	-	33	2.65	
6DL4/EC88	6.3	0.18	RF grounded grid amplifier	160	<u> </u> –.	-1.23	12.5		65	_	
6DX8/EC1.84	6.3	0.72	Video Output Tube; Pentode		220	-	18	3,1	<u> </u>	3	
			Keyed AGC, Sync-Separation Sync-Amplification, Noise Suppression: Thode		_	1,7	3	_	65	_	•

 $^{^{1}\}mathrm{Grid}$ leak resistance = 1 megohm

²Conversion Conductance

Grid 1 to Grid 2

_	Trans.	Max. Power	Load	Cut.Off		
	ance (microm- hos)	Output — 2 Tubes, Pushi Pull Clast B	Resist. ance (K ohms)	Bias (volts)	DESCRIPTION	TYPE NO.
					Miniature high-perveance twin diode for FM or TV detector, or as half or full-wave rectifier or doubter.	6AL5
					Premium Quality version of 6AL5, Resonant frequency 700 Mc.	6AL5W
	6,000 2,300	_	-	_	Twin triode specifically designed for use in "front-end" stages of FM receivers as a combined RF Amplifier and setf-oscillating additive mixer. Features extensive internal screening between the two triodes which reduces oscillator radiation. The high mutual conductance, input resistance and amplification factor make possible un average over-atl	6AQ8/ECC85
	1,200	_		-5	"front-end" gain of 350. For second detector audio amplifier service	6AT6
	1,600	_	_	-4	For second detector audio amplifier service	6AV6
	4,800	_	_	_	Sharp cut off triode pentode designed for use as high gain RF or IF	6AU6
	5,200	- 1		_	umplifier. Valuable in UHF wide trand applications,	
	4,400	-	_	-20	Minufature RF aurptifier peutode with remote cut-off	613A6
	475 ^r	_	_	Eg 3 -30	Miniature frequency convertor for superheterodyne circuits in both standard and FM band broadcast receivers.	6B&6
·	6,200	_			Single-envelope triode-pentode designed for applications in television and AM/FM receivers as a combined oscillator and mixer.	6BL8/ECF80
_	5,000					61949 /11/29 00
	7,500	_	_	_	Single-envelope triode-pentode designed for application in medium power bri-fi amplifiers. Suitable for one-tube phono amplifiers, simple streeo circurts and for vertical deflection in TV applications.	613M8/EC1.82
	11,300	17	8 Plate to Plate	_	lirgh quality pentode designed especially for high fidelity audio systems. High efficiency with low distortion. High sensitivity. Exceedingly small spread in characteristics between individual tobes so that maximum rated output is obtained with all tubes.	6BQ5/EL84
	+-	- 1	-	_	Peutode RF, IF, video amplifier or mixer in TV receivers	63X6/E7/80
					Indirectly heated, full-wave rectifier with 6.3 volt, 1 amp heater, 150 ma output capacity and 9 pin miniature construction.	6CA4/RZ81
	11,300	100	11 Plate- to- Plate	_	High quality pentode designed especially for high fidrlity audio systems. High efficiency with low distortion. High sensitivity. Exceedingly small spread in characteristics between individual tubes so that maximum rated output is obtained with all tubes.	6CA7/EL34
	14,000				A high gain frame grid UHF triode	ьСМ4
	10,000	25	_	_	lligh current, low voltage output poutode for use in medium power hi-fi amplifiers. Useful in single ended push-pull circuits. In a typical trans- formerless circuit, a puir of tubes can deliver up to 10 watts in class AB.	6CW5/E1,86
				·20	High grin remote cutoff pentorle.	6DA6/EF89
	-	-	_	-	Double diode peutode designed especially for use as an RF or IF ampli-	6DC8/EBF89
	3,800	_			fier. The diodes are for AM detection and AGC. The pentode features high mutual conductron — importunt in AM, FM and TV applications.	
	12,500	_	_	-	Twin triode designed for use in cascode circuits, RF and IF amplifiers, mixer and phase inverter stages. Frame grid construction provides high transconductance, low noise and extreme reproducibility of characteristres. Operation at low voltage has been successfully shown in DC coupled amplifiers and 12 volt B+, FM and VHF receivers.	6DJ8/ECC88
	13,500	OU Single triode for use as an RF grounded grid amplifier to UHF tuners for TV receivers. Features brigher RF gain and improved signar-tu-no mrtro. Reduced oscitlator radiation because of improved pinning sequences.			6DL4/EC88	
1	9,700	_	_	-	Trrode-pentode with separate cathodes. Triode designed for use in	6DX8/EC1.84
	4,000	-	_	_	circuits for keyed AGC, sync-separation, sync-amplification and unise suppression. The pentode is designed for use as a video output tithe.	

6EH7/EF183 6EH7/EF184 6ER5 6ER5 6ES8/ECC189 6FY5 6GB5/EL500 6GJ7 6GK5 6GM8/ECC86 6GV8/ECL85 6GW8/ECL85	EU .	AMENT	TYPICAL	OPER	ATING C	UNDITI	UNS AN	U CHAN	ACTER	121162	_
TYPE NO.	FILA	T	Circuit Application	Арј	olited Volt	ages	Plate Cyrient	Screen Current	Amplifi-	Plate Resist	
	Yolts	Amps	Суссия яррисатия	Plare	Screen	Gitd	(ma)	(ma)	Factor	(K ohms)	0
6EH7/EF 183	6.3	0.3	tF Amplifier	200	90	-2	12	4.5	_	500	
6FJ7/FF184	6.3	0, 3	IF Amplifier	200	200	-2,5	10	4.1	60	350	
6ER5	6.3	0.18	RF Amplifier triode	200		-1.2	10	_	80		
6ES8/ECC189	6.3	0.365	Cascode AGC controlled RF Amplifier.	90	-	-1.4	15.0	_	34	2,5	
6FY5	6.3	.2	RF Amplifier	135	_	-4.5	11.0	-	70	_	
6GB5/EL500	6.3	1.4	Horizontal deflection output stages of TV receivers	75	200	-10	440	37			
6GJ7	6,3	0.41	TV osciflator-mixer: Triode-Pentode	100 170	120	-3 -1.2	15 10	3.0	20	>350	
6GK5	6.3	0.18	VHF Triode	135	-	-1	11	_	70	5.2	
6GM8/ECC86	6.3	0.33	RF Amplifier Mixer	25 25	_	0 -	7.5 2.6	_	14	2.1	
6GV8/ECL85	6,3	0.9	Driver for pentode stage: Triode	100	-	-0,8	5	-	50	7.6	
			Vertical deflection tube for 110° picture tubes: Pentode	170	170	_	41	2.7	7	25	
6GW8/ECL86	6.3	0.7	AF Amplifier: Triode	250	_	-1,7	1,2	_	100	_	
			AF Amplifier: Pentode	250	250	-7	36	5.5	223	4.5	
6HA5	6.3	0.18	RF Amplifier Triode	200	-	-5.7	11.5	+	72	5.6	
6HG8/ECF86	6.3	0.34	VHF, TV tuners: Triode- Oscillator	100		-3	14	-	17	-	
			VHF, TV tuners: Pentode- Mixer	170	150	-1.5	10	3,3	603	350	
6J6	6, 3	0.45	HF Oscillator, RF Amplifier or Mixer	300	-	-40	15	-		10	
6JX8/ECH84	6.3	0.3	lleptode-Triode	135 60	14	0	1.7	0.9	50	16	
6R3/EY81	6.3	0.81	Damper Diode	Po	eak Invers Voltage 5,600	se P	eak Plate Current 450 ma	A	Verage P Current 150 ma		
6U8	6.3	0.45	Pentode — Triode	300 150	300	-0,7 -1	10 18	3.5	40	400	
6V4/EZ80	6.3	0.6	Full Wave Rectifier	DC O	upply (Pla utput Cur Capacity utput Vol	rent (max Condens	.)		= 2 X 3 = 90 m = 50 \textit{\mu} = 310 \textit{\mu}	a [
6X4	6.3	0.6	Full Wave Rectifier	DC O	pply (Pla itput Curi ium Input itput Voli	rent (Max Capacito	-)	ige (RMS)) = 2 x 32 = 70 mm = 10 μ f = 310 V		
7HG8/PCF86	8	0.3		(F	or other o		611G8/EC	+			
8BQ5	8	0.6	Output Pentode	250	250	.7.3	48	5.5	-	40	_ 🛡
8GJ7	8.6	0.3	TV oscillator-mixer: Triode-Pentode	100 170	120	-3 -1.2	15 10	3.0	20	> 350	

	Trans. canduct. ance (microm- hos)	Max. Power Output — 2 Tabes, Push- Pull Closs B	Load Resist- ance (K ohms)	Cut-Off Bias (valts)	DESCRIPTION	TYPE NO.
	12,500	_	_	_	Frame grid temote cut-off pentode designed for use as an 1F amplifier in TV teceivers. High transconductance, low capacities, and low feed back capacity, enables construction of simplified broad band amplifiers with high stability.	6EH7/EF183
	15,000	-	_	-	Frame grid sharp cut-off pentode designed for use as an IF amplifier in TV receivers. High transconductance, low capacities, and low feed back capacity, enables construction of simplified broad band amplifiers with high stability.	6EJ7/EF184
	10,500	_	_	-	High gain miniature frame grid shrelded triode designed for service in VHF tuners for television receivers.	6ER5
	12,500	-	-	-	High performance, frame grid twin triode with remote cut-off characteristics. Designed for use as low noise cascode tube in premium TV tuners.	6ES8/ECC189
	13,000	-	-	_	High gain miniature frame grid shielded triode with remote cut-off. Designed for service in VHF tuners for television receivers, and is controlled for low noise figure at 220 mc and operation at low supply voltages.	6FY5
	-	-	-	-	All-glass beam power pentode designed for use in horizontal deflection output stages of TV receivers. Features large plate-to-series grid current ratio and a magnoval base with peak plate voltage of 7KV.	6GB5/EL500
	11,000	_	_	_	Ampliframe triode — pentode for oscillator-mixer service in television applications.	6GJ7
	13,000	_	_	-4.2	A high gain frame guid VIIF taiode.	6GK5
	7,800	_	-	-	Finuse grid twin triode designed for low voltage applications. Suitable for instrumentation and industrial applications as a direct-coupled wide band amplifier and for automobile radio sets and as an RF amplifier and	6GM8/ECC86
	6,500	_	_	-	self-oscillating mixer. May be operated directly from a storage battery. Triode-pentode especially intended for vertical output stages, particularly 110° picture tubes. Special attention has been paid to microphony,	6GV8/ECL85
	7,500	_	_	-	linearity and S-effect.	
-	1,600	_	_	-	Triode-pentode with separate cathodes. Designed for sound output and	6GW8/ECL86
	10,000	_	-	-	preamplifier stages in audio apparatus and TV receivers.	
	14,500	-	_	_	Ampliframe shielded triode for use as RF amplifier in VHF television tuners.	6HA5
	6,000	-	-	_	Triode-pentode for use in mixer stage of VIIF tuners in TV receivers. Pentode section incorporates a frame grid for high conversion gain.	611G8/ECF86
	12,000	-	_	-		
	5,300	-	_		Miniature dual triode having a common cathode.	6 J 6
	2,200 3,700	_	_	-11	Triode heptode for use as a pulse separator, noise inverter and sync. amplifier	6JX8/ECH84
					Diode designed for use as damper in horizontal output circuits of television receivers.	6R3/EY81
	5, 200 8, 500	Ξ		-10 -12	As local oscillator - pentode mixer in FM and TV receivers and other uses	6U8
					Indirectly heated, full-wave rectifier with 90 ma output capacity and 9 pin miniature construction.	6V4/EZ80
					Miniature cathode type rectifier	6X4
					This tube is a 300 ma version of the 6HG8/ECF86.	7HG8/PCF86
	11,300	17	- 8	-17.5	Output pentode for medium power hi-fi amplifiers	8BQ5
	11,000	_	_	-	Amplifiame triode-pentode for 300 ma series string operation as an oscillator-mixer in television applications.	8GJ7
			h			

ENTERTAINMENT & AUDIO TUBES* (Continued)

	F41.		TYPICA	L OPER	ATING C	ONDITI	ONS AN	D CHAR	ACTER	ISTICS
TYPE NO.	FILA	MENT		Ap	plied Volt	oges	Plate	Screen	Amplifi-	Plate Resist.
	Volls	Amps	Circuit Application	Plate	Screen	Grid	(ma)	Current (ma)	Factor	(K ohms)
9A8/PCF80	9	0, 3	AM/FM Oscillator Mixer	(Fe	or other da	ita see 6	BL8/EC	F80)		
12A'T7/ECC81	12.6 6.3	0.15	Voltage Amplifie	250	-	-2.0	10.0	-	55	_
12AU7/ECC82	12.6 6.3	0.15 0.30	Voltage Amplifier	250	-	-8.5	10.5	_	17	7.7
12AX7/ECC83	12.6 6,3	0.15 0.30	Voltage Amplifier	250		-2.0	1.2	_	100	62.5
15CW5/PL84	1.5	0,3	Medium Power Hi-Fi Ampliliers		(For o	lher data	see 6CW	5/EL86)		İ
16AQ3/XY88	16,4	0.6	Damper diode	İ	(For or	her data	see 6AL	3/EY88)		-
17EW8	17.5	0,15	RF Dual Triode	200	_	-2.1	10	_	_	1.5
27GB5	27	0.3	florizontal Deflection Out- put of TV Receivers	ĺ	(For o	ther data	sec 6C1	35 ថាម(១)		
45B5/UL8-0	4.5	0,1	IDEN'ICAL ELECTRICAL C	HARACT	ERISTICS	AS 6CW	5/EL86			
50BM8	, 50	, 0.1	Voltage Amplifier & Power Output Tube		(For ot	her data	see 6BM	8/EC1.82))	
b267 EF86	6.3	0.2	Voltage Amptifies	250	140	-2.0	3.0	0,6	-	2500
7025	12.6 6,3	0.15 0.30	Voltage Amplifier	250	-	-2,0	1,2	_	100	62,5
7189	6,3	0,76	Power Ourput Tube	250	250	-7.3	48	5,5	19,5	40
8278	6.3	1.2	Audio Output Tetrode	265	265	12.5	2x115	2x27	_	_

TUNING INDICATOR TUBES

	FIL.	AMENT		Screen Cunent		Grid Blos For
TYPE NO.	Volts	Amps	Supply And Screen Valis	At Start Of Control (ma)	Anode Series Resistonce (Megohms)	End Of Control Range (Volts)
1M3/DM70	1.4	0.025	85	0, 17	-	- 10
IN3/DM71	1.4	0.025	85	0.17	-	-10
6CD7/EM34	6, 3	0, 2	250	2,0	1.0	Section 1 = .5 Section 2 = .16
6FG6/EM84	6, 3	0, 27	250	1.1	0,47	-22
6HU6/EM87	6.3	0,3	250	2	0, 1	-10

PREMIUM QUALITY TUBES

		HE	ATER		Tions				TYPIC	AL OPER	ATION
TYPE NO.	PROTO. TYPE			Amplification	conduct:	PLAT		PLATE		SCREEN	
	=	Volts	Amps	Factor	(Microm-	Volts	Current ma.DC	Resistance K Ohms	Volts DC	Valts DC	Conent ma-DC
5726	6AL5	6,3	0.3				Max	. plate 117 \ Peak pt	/, rms at 9 ate current		
5654	6AK5	6,3	0, 175	-	5000	120	7.5	340	R _k =200	120	2.5

Available to Military Specifications.

²Gnd 2 to Grid I.

³Plate Current = 10 µa approx.

Tions. canduct. ance (microm- hos)	ducr. Output-2 Tubes, Push. Crom. Pull (K. abns.)		Bias	DESCRIPTION	TYPE NO.	
				This tube is a 300 ma version of the 6BL8/ECF80	9A8/PCF80	
5,500	-	_	-12.0	Medium-gain dual triode with low hum, noise and microphonics. High quality replacement for the standard 12AT7 without circuit changes.	12AT7/ECC8	
2,200	_	_	_	Low noise dual triode with low hum, noise and microphonics. High quality replacement for the standard 12AU7 without circuit changes.	12AU7/ECC8	
1,600	_	_	_	High-gain dual triode with low hum, noise and microphonics. High quality replacement for the standard I2AX7 wilhout circuit changes.	12AX7/ECC 8	
				Thus tube is a 300 ma version of the 6CWS EL86	15CW5 PL84	
				This tube is a 600 ma version of the tiAL3/EY88	16AQ3/XY88	
5,800	-	-	_	Dual triple for use as an RF amplifier and self-oscillating mixer	17EW8	
				This tube is a 300 ma version of the 6GB5	27GB5	
					45B5/UL84	
					50BM8	
2,000	-	-		High gain pentode particularly suitable for pre-amplifier and input stages in which hum, noise and micruphony must be kept to a minimum. Electrode structure rigid. Heater is bifilar, twisted pair of wires with magnetic field of one opiused to that of the other.	6267/EF86	
1,000	-		_	High gain dual triode with low hum, noise and microphonics, the 7025 is a direct, high quality replanement for the 12AX7/ECC83.	7025	
11,300	2-4	-	-	Miniature pentode designed for use as a nower amplifier in high fidelity audio equipment. It is a specially tested and improved tube intended for use in amplifiers of over 20 watt capabilities.	7189	
24,000	40	2.4 Plate	-	Beam power tetrode designed for push pull audio output stages.	8278	

DESCRIPTION	TYPE NO.
Tuning indicator especially designed for buttery operated sets featuring low filament consumption (25mA),	1M3/DM70
subministure size and "on-off" indication, ideal for transistorized computers. Tuning indicator especially designed for buttery operated sets featuring low filament consumption (25mA),	IN3/DM71
subministure size and "un-off" indication. Idea; for transistorized computers.	
Tuning indicator featuring double sensitivity, clear indication even with wrisk signals.	6CD7/EM34
9 pin miniature tuning indicator for use in broadenst receivers and tape reconlers. The deflection electrode is connected separately to, a pin of the base. Converging dual fluorescent bar pattern.	6FG6/EM84
Designed especially as an ambo level indicator for tape recorders.	6HU6/EM87

				CAPA	CITANCES	-ppt		
	Power Load Output Resistance Watts Kahms		Cut-Off Bias Volts	G-P	Input	Output	DESCRIPTION	TYPE NO.
r				_		-	High perveance twin diode. Rugged and reliable. For use in critical applications in which operational dependability is of primary importance.	5726
	-	_	-12	0, 02	4.0	2,9	Sharp cut-off pentode particularly suited for use as a wide hand, high frequency amplifier. Ruggedized construction makes it suitable for critical applications in which operational dependability is of primary importance.	5654

PREMIUM QUALITY TUBES (Continued)

		HE	ATER		Trans.				TYPIC	AL OPER	ATION	
TYPE NO.	PROTO.			Amplifi-	conduct-	-	PLATE		Grid	SCR	EEN	
	,,,,	Volts	Amps	Factor	(Microm- hos)	Volts DC	Current ma-DC	Resistance K Ohms	Volts DC	Volts DC	Current mo-DC	
58471	404A	6.3	0.3	_	12500	160	13	-	+8.5	160	4,50	
6201	12AT7	6.3	0,30	60	5500	250	10	10.9	R _k =200	_	_	
		12.6	0.15									
6218/E80T		6,3	0. 15	-	_	100	1,35	_	0	70	-	
7316		6,3	0.3	19.5	3100	100	11,8	6250	-8.5	_	_	
7643	Triode Section	6.3	0,33	18	5000	Supply 100	14		R _k =120 Ohms	_	_	
	Pentode Section	6,3	0.33	402	6200	Supply 170	10	0.4 meg	R _k =155 Ohms	Supply 170	2,8	
7693/E90F		6.3	0.15	50	4600	250	7,4	1.3 meg		150	2.9	
7694/E99F		6,3	0.15	271	3600	250	9,2	1 meg	-204	100	3, 3	
8233		6.3	0.6	30	45000	140	50	20	-1.5	140	5.5	•

²Grid 2 to Grid 1.

PREMIUM QUALITY 10,000 HOUR TUBES 1

							KAM	CIMUM RAT	ING5		
 	HEA	TER	CA	PACITAN	CES	Max. Anode	Anode	Suppressor	Screen	Cothode	
TYPE	Voltage	Current	Cold Values	Input	Output	Dissi- pation	Voltage	Grid Voltage	Grid Voltage	Current	
	volts	omps		μμε	μμι	watts	volts	volts	volts	rn O	
E92CC Twin Triode	6.3	0.4	one section	3.1	0.3	2.0 ² (absolute value)	300	-	_	15	
5842 ⁴ Triode	6,3	0.3	-	9.0	1.8	4.5	400	-	-	38	
5920/E90CC Twin Triode	6.3	0.4	one section	3.4	0.35	2.0 ² (absolute value)	300	_	-	15	
6084/E80F ³ Sharp cut-off amplifier pentode	6.3	0.3	_	5.0	7.3	1.3 (absolute value)	300	0	200	9	
6085/E80CC ³ Twin Triode	Series 12.6 Par.	0.3	one section	2.6	3.5	2.0 ² (absolute value)	300	-	-	12	
6211 Twn Triode	6.3	0.3	one section	2.9	0.35	1.5 ² (absolute value)	200	-		14	

¹These tubes are designed for a life of 10,000 hours or more.

 $^{^{\}mathrm{I}}\mathrm{Pfate}$ Current = 10 μ s approx.

²Ratings and operating conditions apply to one section.

				CAPA	CITANCE	5 - μμε			
	Power Output Watts	Output Resistance Bias G-P		G-P	In put	Output	DESCRIPTION	TYPE NO.	
•	_	_	_	0.05	7.0	2, 5	High-gain, miniature pentode for use in broad band amplification where its high figure of merit is required for Replacement purposes only. For new equipment design Amperex 6688 is recommended.	5847	
	_		-20	1, 6	2,5	0,45	Premium quality twin triode designed for use as RF amplifier in grounded grid circuits; as a frequency changer below 300 mc; in mobile and industrial equipment with intermittent operation; and in on-off control applications where operation under cut-off conditions is required.	6201	
	_	_	_	_	2, 2	2,0 max,	Ruggedized beam deflecting tube designed for use as a phase discriminator in impulse governed oscillators.	6218/E80T	
		_		1.6	1, 8	0.5	Medium mu long life, reliable twin triode with separate cathodes designed for application in computer circuits not critical as to hum, microphony and noise.	7316	
	_	_	_	1.5 <0.025	2, 5	3,4	Long-life, ruggedized triode-pentode. Pen- tode section designed for use as a mixer, RF or AF amplifier. Triode section designed for use as an oscillator up to 300 mc, multi- vibrator or blocking oscillator.	7643	
	_	_	6, 53	0.0035	5.0	4.2	Sharp cut-off, shock and vibration resistant HF pentode for mobile applications. Premium type replacement for 6BH6/6661.	7693/E90F	
4	_	_	_	0.0035	4, 5	5,2	Variable stope HF pentode for mobile and industrial applications. Shock and vibration resistant premium type replacement for 6HJ6/6662.	7694/E99F	
	pun	-	-6	110	18	4	Double frame grid power pentode for video, pulse or deflection amplifier service in micro wave, radar, TV or measuring instruments. It has a plate dissipation of 10 watts.	8233	

⁴For transconductance of 1500 micromhos.

				TYPI	CAL CHA	RACTERIS	TICS				
	Screen Grid Voltage	Anode Voltage	Cathode Resistor	Anode Current	Screen Grid Current	Trons. can- ductance	Amplific cation Foctor	Plate Resisti once	Maximum Length	Maximum Diometer	TYPE
	volts	valts	ohms	rinj Cr	JT: Q	micromhos		megahms	inches	triches	
		150	_	8,5		6,000	45	0.0083	2-5/8	3/4	E92CC Twin Triode
	_	E30	360	27		27,000	43	0.0016	1-3/4	7/8	5842 ⁴ Triode
	_	100	_	8.5	_	6,000	27	0.0045	2-5/8	3/4	5920/E90CC Twin Triode
	100	250	550	3	0,65	1,850	25	1.5	2.5/8	7/8	6084/E80F ³ Sharp cut-off amplifier pentode
•	_	250	920	6	_	2,700	27	0.01	3-1/16	7/8	6085/E80CC ³ Twin Triode
	_	100	470	4.6	_	3,600	27	0. 0075	2-5/8	7/8	6211 Twin Triode

³Rugged construction. ⁴Available to military specifications.

PREMIUM QUALITY 10,000 HOUR TUBES 1 (Continued)

							MAX	CIMUM RAT	INGS		
	HEA	TER	C.	APACITAN	CES	Max.	Anode	Suppressor	Screen	Cathode	
TYPE	Valtage	Current	Cold Values	Input	Output	Dissi- pation	Voltage	Grid Voltage	Grid Valtage	Current	
	volts	Qm D \$		μμε	μμε	walts	volts	volts	volts	mo	
6227/E80L³ Power Pentode	6.3	0.75	_	11.0	7,0	8.0 (absolute value)	300	0	300	50	
6463 medium mu twin triode	6.3 12.6	0.6 0.3	one section	3.4	0.5	4.1	330			31	
6686/E81L Power Pentode	6,3	0.375	_	11.5	6,5	d.5 (design center value)	210	O	210	30	
6687/E91H dual control heptode	6.3	0.27	_	5,4	7.6	1.0	250	-100 +0	100	20	
6688 4 4 Broad-band amplifier pentode 6688 A	6.3	0.3	-	7.5	3.0	3.0 (absolute value)	210	0	175	25	
6689/E83F wide-band amplifier pentode	6,3	0.3		8.0	3.6	2.1 (design center value)	210	0	210	16	
6922/E88CC ³ Twin Triode	6,3	0,3	one section	3.1	0.5	1,5 ² (design center value)	220	-	_	20	
7062 Twin Triode	6.3 12.6	0.400	one section	3.5	0.5	2.0 ² (alisolute value)	600	_	_	20	
7119/E182CC Twin Triode	Series 12,6 Par,	0.4	one 500tion	5.3	6,7	4.5 (absolute value)	300	_	-	b0	
7308/E188CC4 Twin Triode	6.3	0.335	one section	3, 1	1.75	2.0	250	_		22	_
7534 Pentode	6.3	1 7	_	35	17	27.5	900	-	250	300	
7737 ⁴ Pentode	6.3	0.32	_	7.6	3.3	3	210	_	175	25	
7788 Pentode	6.3	0.34	_	16.5	3,3	5	250	-	200	50	

These tubes are designed for a life of 10,000 hours or more. Ratings and operating conditions apply to one section.

UHF SPECIAL PURPOSE TUBES

TYPE NO.	FILA	MENT	Plate , Dissipation	Мυ	Transcon-	PLA	TE	Power Output	
	Valts	Amps	Watts		(micromhas)	Volts	Мо	Characteristics	
6923/EA52	6.3	0.3		-	-	1000 V at <100 mc 1000 x for at >100 mc	0.3	- 1	
EFP60	6.3	0.37	2	_	25,000	300	20	_	
6Q4/EC80	6.3	0.45	4	30	12,000	550	15	15 db gain al 300 mc (Bandwidth 4.5 me)	•
6R4/EC81	6.3	0.24	5	16	5,500	300	27.7	Power output 1,1 w at 750 mc	

				TYPI	CAL CHA	RACTERIS	TICS				
•	Screen Grid Voltage	Anode Voltoge	Cathode Resistor	Anode Current	Screen Grid Current	Trans. con- ductance	Amplification Factor	Plate Resist- ance	Moximum Length	Maximum Diometer	TYPE
	volts	volts	ohms	ma	m o	micromhos		megohms	Inches	inches	
	250	250	270	24	3.3	9,000	21,5	0.09	3-1/16	7/8	6227/E80L ¹ Power Pentode
	_	250	620	14.5	_	5,200	20	_	2.5/8	7/8	6463 medium mu Iwin Iriode
	210	210	120	20	5,3	11,000	36	0.3	2-5/8	7/8	6686/E81L Power Pentode
	control at	-10 volts and	plate voltage	at 150 volts,	the plate on	"on-off" con rrent will be .75 ma, Direct	less than 0.2	ma. With	2-1/8	3 4	6687/E91H dual control heptode
	160	190	630	13	3.3	16,500	50	0,09	1-3/4	7/8	6688 3 4 Broad-band amplifier pentode 6688 A
	120	210	165	10	2.1	9,000	34	0.5	2-5/8	7/8	6689/E83F wide-band amplifier pentode
	-	100	680	15	-th-	12,500	.33	0.00264	2-3/16	7/8	6922/E88CC ³ Twin Triode
		150	_	8.5	_	6,400	46	0.0072	2-5/8	7/8	7062 Twin Triode
	_	120	_	36	9-0	15,500	24.5	0.0016	2-578	7/8	7119/E182CC Twin Triode
	_	100 (supply)	680	15	-	12,500	33	_	2-3 (16	7/8	7308/E188CC* Twin Triode
	150	250	_	100	4	25,000	(i, 5	_	.5	1-9/16	7534 Pentode
	_	_	630	13	3.3	16,500	53	0.1	1.1/2	7/8	7737 ⁴ Pentode
	_	+	360	35	5	50,000	60	_	2-13/16	7/8	7788 Pentode

³Rugged construction.

⁴Available to military specifications.

Mox. Freq.	μμ			DESCRIPTION	TYPE NO.
 mc .	G-P	Input	Output		
1000	-	<_0,5	-	Disc-seal, vacuum diode for UHF voltmeters and monitoring devices. Anode pin connection adaptable for use as probe contact.	6923/EA52
-	0,004	9, 2	6	Secondary emission pentode for wide band amplifier application where stability and high ratio of transconductance to capacities is important. Used in high speed computer service and high quality TV applications.	E4560
500	0.06	5.4	3.4	Radiation-cooled triode, button type base, indirectly heared cathode. For use as amplifier and mixer up to 500 mc. Ideally suited for UHF television, baloon sondes, measuring equipment, etc.	6Q4/EC80
1200	1.5	1,7	0.5	Radiation-cooled triode, standard button base, indirectly heated cathode. Used as oscillator up to 1200 mc. High efficiency at high frequencies.	6R4/EC81

UHF SPECIAL PURPOSE TUBES (Continued)

TYPE NO.	FILA	MENT	Plate Dissipation	Au	Transcon-	PLATE		Power Quiput
	Volts	Amps	Watts		(micromhas)	Volts	MA	Characteristics
699	6,3	0.6	6		10,500	275	90	_
EA53	6,3	0.3	_	_	-	Inverse 1000 V at <1000 mc 1000 x fo ¹ at > 100 mc	0.3	
8254	6.3	0.185	1.5		14,500	110	22	

 $^{^{}L}$ fo = 100 mc

RADIATION COUNTER TUBES (PERMANENT SENSITIVITY)

TYPE NO.	Filling	Operating Valtage D.C.	Plateau	Stape Plateou	Dead Time (Approx. μ sec.)	Bockground C/M (Shielded 2" Leod)
75N-7	Neon + quenching admixture	700 ²	in excess of 125 volts	15% per 100 volts max.	100	50 max,
75NB3-7	Neon + quenching admixture	700 2	in excess of 125 volts	15% per 100 volts max.	100	50 max.
75NB3-9	Neon + halogen admixture	825	In excess of 125 volts	15%/100 volts	100	50 max.
76NB3	Neon + halogen admixture	arbitrary within plateau range	in excess of 125 volts	<15% per 100 volts	100	50
90CB	Neon + quenching admixture	1400	in excess of 200 volts	10% per 100 volts max.	100	50 max.
90NB-4	Neon + quenching admixture	900 2	in excess of 200 volts	10% per 100 volts max.	100	50 max.
100C	Argon + quenching ndmixture	1200	in excess of 300 volts	5% to 10% per 100 volts	200	50 max.
100CB	Argon + quenching admixture	1200	in excess of 300 volts	5% to 10% per 100 volts	200	50 max.
100 HB	11elium + organic quenching agent	1300	in excess of 250 volts	1,5% per 100 volts	150	50 max.
1001,13	Neon, argon + quenching admixture	arbitrary within plateau range	450-750 volts	1% avg. 2% max. per 100 volts	250	25 max,
100N	Neon + quenching admixture	900 2	in excess of 200 volts	5% to 10% per 100 volts	200	50 max.
100NH	Neon + quenching admixture	900 2	in excess of 200 volts	5% to 10% per 100 volts	200	50 max.
120C	Argon + quenching admixture	1200	in excess of 300 volts	5% to 10% per 100 volts	300	100 ກເອx.
120N	Neon + quenching admixture	900	in excess of 200 volts	5% to 10% per 100 volts	300	100 max,
120NB	Neon + quenching admixture	9002	in excess of 200 volts	5% to 10% per 100 volts	300	100 max,
150N	Neon + quenching admixture	900	in excess of 180 volts	10% per 100 volts max.	150	75 max.
150NB	Neon + quenching admixture	900	in excess of 180 volts	10% рет 100 volts max,	150	75 max.
153C	Argon + quenching admixture	1500	in excess of 400 volts	3% to 8% per 100 volts	150	60 max.
155N	Neon + halogen admixture	arbitrary within plateau range	in excess of 180 volts	10% per 100 volts max.	150	75

NOTE: All cathodes are stainless steel. Operating temperature range, -55°C to +75°C, ⁴ Detailed data available upon request, ² Also available in 600 volt operating voltage. Specify Type followed by -6. For 900 volt operation, specify Type followed by -9.

	Max. Freg.	mc		CES	DESCRIPTION	TYPE NO.
	mc			Output		
0	500	0.15	6.4	1.6	Wide band push-pull amplifier tube for use in test instruments, distributed amplifiers and computers. Push-pull construction offers high gain band width product coupled with low output capacitance.	7699
	1000	_	0.5	-	Disc seal, vacuum diode for UHF voltmelers and monitoring devices. Anode pin connection suitable for use as probe contact. Coaxial filament connection suited for use in coaxial probes.	EA53
	$Z \text{ in} = 450\Omega$ at 250 mc	1.9	3.5	0.3	Special quality triode for use as an amplifier in probes.	8254

Average Mica Window or Wall Thickness	Effective Dia. af Mica Window (Inches)	Effective Cathode Dimensions (Inches)	Max. Overall Tube Dimensions (Inches)	Expectancy (Caunts)	Application
150 mg/cm ³	_	2.687 x 0.625 O.D. x 0.009 wall	0.625 x 4.375		Gamma
150 mg/cm ²	_	2.687 x 0.625 O.D. x 0.009 walt	0.625 x 4.312 (3 pin base)		Gamma
0.009 inches	**	2.687 x 0.607 O.D. x 0.009 wall	4.31 x 0.62 O.D.		Gamma
_	shade	5.812 x 0.605 1.D. x 0.009 wall	0.625 x 7.531	y use	Gamma
30-40 mg/cm ²	-	3 x 0.625 O.D.	0.625 O.D. x 5.625 (3 pin base)	Unitalised by use	Beta & Gamma
30-40 mg/cm ²	484	3 x 0.625 O.D.	0.625 O.D. x 5.625 (3 pin base)	Untin	Beta & Gamma
.0005 in. = 3.5 mg/cm ² = 12.70 mlcrons	1.093	1.5 x 1.187 O.D. x 0.093 wall	1.5 x 3.75		Beta & X-Ray
.0005 in. = 3.5 mg/cm ² =12.70 microns	1.093	1.5 x 1.187 O.D. x 0.093 wall	1.375 x 4.344 (4 pin base)		Beta & X-Ray
.0005 in. = $3.5 \text{ mg/cm}^2 = 12.70 \text{ microns}$	1.093	1.5 x 1.187 O.D. x 0.093 wall	1.375 x 4.344 (4 pin basc)	1.5 ж 10 [#] арргох.	Beta
2.5-3.5 mg/cm ²	1.093	1.42 x 1.5 O.D. x 0.051 wall	1.312 x 4.344 (4 pin base)		Beta & Gamma
.0005 in. = 3.5 mg/cm ² = 12.70 microns	1.093	1.5 x 1.187 O.D. x 0.093 wall	1.5 x 3.75		Beta
.0005 in. = 3.5 mg/cm ² = 12.70 mlerons	1.093	1.5 x 1.187 O.D. x 0.093 wall	1.375 x 4.344 (4 Pin Base)	USe	Beta
.0008 in. = 5.6 mg/cm ² = 20,32 microns	1.906	2.687 x 2 O.D. x 0.078 wall	2.375 x 5.125	Unlimited by use	Beta & X-Ray
.0008 in. = 5.6 mg/cm ² =20.32 microns	1,906	2.687 x 2 O.D. x 0.078 wall	2.375 x 5.125	nlimit	Beta
.0008 in. = 5.6 mg/cm ² = 20.32 microns	1.906	2.687 x 2 O.D. x 0.078 wall	2.312 x 5.75 (4 pin base)	3	Beta
.0005 in. = 3.5 mg/cm ² = 12.70 mlcrons	0.781	4 x 0.875 O.D. x 0.046 wall	1 x 6.625 (4 pin base)		Beta & Gamma
.0005 in. = $3.5 \text{ mg/cm}^2 = 12.70 \text{ microns}$	0.781	4 x 0.875 O.D. x 0.046 wall	1.156 x 7.125		Beta & Gamm
.0005 in. = $3.5 \text{ mg/cm}^2 = 12.70 \text{ microns}$	0.781	4.375 x 0.875 O.D.	1 O.D. x 6 1g.		X-Ray
1.4-2.0 mg/cm ²	0.950	4.375 x 0.875 O.D. x 0.046 wall	0.937 x 6		Beta, Gamma, Alpha

RADIATION COUNTER TUBES 1 (PERMANENT SENSITIVITY) (Continued)

TYPE NO.	Filling	Operating Voltage D.C.	Plateau	Slape Plateau	Dend Time (Approx. μ sec.)	Bockground C/M (Shielded 2" Leod)	
160G	Neon + halogen quenching admixture	700	680-780 volts	15% per 100 volts	_	40 max.	
171G	Neon, argon, + halogen admixture	630	700-840 volts	8%/100 volts		40	
200C	Argon + quenching admixture	1200	in excess of 300 volts	5% to 10% per 100 volts	200	50 max.	1
200CB	Argon + quenching admixture	1200	in excess of 300 volts	5% to 10% per 100 volts	200	50 max.	
200HB	Helium + organic quenching agent	1300	in excess of 250 volts	1,5% per 100 volts	150	50 max.	
200LB	Neon, argon + quenching admixture	arbitrary, within plateau range	450-750 volts	1% avg. 2% max. per volt	250	25 max.	
200N	Neon + quenching admixture	900	in excess of 200 volts	5% to 10% per 100 volts	200	50 max.	
200NB	Neon + quenching admixtur e	900	in excess of 200 volts	5% to 10% per 100 volts	200	50 max,	
240N	Neon + quenching admixture	850-900	in excess of 150 volts	Less than 15% per 100 volts	100	50 max.	
300PC	Xenon-methune	1850					
310PC	P-10	1500 for pulse amp. of 10 mv.	Resolution with	_	***		
311PC	P-10	1425 for pulse amp. of 10 inv.	Resolution with Fe 55 < 30%	-	-		4
312PC	P10	1225-1525		1.0			
315PC	P-10	1500 for pulse amp. of 10 my	Resolution with Fe 55 \le 30%	_	_	_	
400PC	Methane 99,6% or Argon 10% Methane	1400 1200	Pulse amp. for 5 alphn parti- cle is 0.5 V.				
500N	Neon + Argon + halogen	500	200		75	10	
505N	Argon + halogen	875	400				
506N	Argon + halogen admixture	875	900-1200 volts	2%/100 volts			
507N	Krypton + halogen admixture	1000	1050-1300 volts	4%/100 volts	_=		
912NB-41	Neon + quenching admixture	900	in excess of 200 volts	10% per 100 volts max.	100	75 max.	
18503	Neon, argon + halogen quenching agent	arbitrary, within plateau range	400-600 volts	0.01%/volt avg. 0.02%/volt max. ⁸	100	10 max.	
18504	Neon, argon + halogen quenching agent	arbitrary, within plateau range	400-600 volts	0.01%/volt avg. 0.02%/volt max.*	100	10 mex.	
18505	Neon, argon + halogen quenching agent	arbitrary, within plateau range	470-750 volts	0.01%/volt avg. 0.02%/volt max.	200	15 max.	
18506	Neon, argon + halogen quenching agent	arbitrary, within plateau range	470-800 volts	0.01%/volt avg. 0.02%/volt max.	250	25 max.	1

NOTE: All cathodes are stainless steel. Operating temperature range, -55°C to $\pm75^{\circ}\text{C}$.

 $^{^3}$ Also available with 3 Pin Base, specify Type 912NB-3. Overall tube length = 11-3/8 $^{\prime\prime}$.

	Average Mica Windaw or Wall Thickness	Effective Dia. of Mica Window (Inches)	Effective Cathode Dimensions (Inches)	Max. Overall Tube Dimensions (Inches)	Life Expectancy (Counts)	Application
	_	_	6.312 x 0.406 O.D. x 0.187 wall	0.406 x 8.125		Gamma
	0.20 inches	-	0.410 O.D. x 17 x 0.20 wall	0.418 O.D. × 18.750	use	Gamma Detector for High Temperature Applications
	.0002 in. = 1.4 mg/cm ³ = 5.08 microns	1.093	1.5 x 1.187 O.D. x 0.093 wall	1.5 x 3.75	Unlimited by use	Alpha, Beta, Gamma & X-Ray
	.0002 in. = 1.4 mg/cm ² =5.08 microns	1.093	1.5 x 1.187 O.D. x 0.093 wall	1.375 x 4.343 (4 pin base)		Alpha, Beta, Gamma & X-Ray
	.0002 in. = 1.4 mg/cm ³ = 5.08 microns	1.093	1.5 x 1.187 O.D. x 0.093 wall	1.375 x 4.343 (4 pin base)	1.5 x 10 ^a approx.	Alpha & Beta
	1.4-2.0 mg/cm ²	1.093	1.42 x 1.5 O.D. x 0.051 wall	1.937 x 4.344 (4 pin base)	•	Alpha, Beta & Gamma
	.0002 in. = 1.4 mg/cm ² =5.08 microns	1.093	1.5 x 1.187 O.D. x 0.093 wali	1.5 x 3.75	Unlimited by use	Alpha & Beta
	.0002 in. = 1.4 mg/cm ² =5.08 microns	1.093	1.5 × 1.187 O.D. × 0.093 wall	1.375 x 4.344 (4 pin base)	mited	Alpha & Beta
	.0002 in. = 1.4 mg/cm ² =5.08 microns	0.406	4 x 0.625 O.D. x 0.010 wall	0.625 x 5.875 (3 pin base)	Undi	X-Ray
	1.5-2.0 mg/cm ²	0.250	3.25 x 0.834 O.D.	4.090 x 1 O.D.		Side window sealed proportional counter for low energy applications as Mossbauer studies, X-ray diffraction and spectrometry.
	2 mil beryllium	0.5	0.687 O.D. x 0,844	0.687 O.D.×1.781 lg.	es du	Low energy miscirons > 30 o key end gemme or X-Reys <11A
0	1 - 1.5 mg/cm ²	0.25	0.687 O.D. x 0.844	0.687 O.D.x1.781 lg.	l by u	Low energy electrose > 30 o kev end gemme or X-Reye < 11A
	2 mil beryllium	0.250	0.688 O.D. x 0.844	0.688 O.D. x 1.78	Unlimited by use	End window sealed proportional for low energy electrons >15 kev and gamma or X-rays <10Å
	2.5-3.5 mg/cm ²	0.875	1 O.D. × 0.912	1 O.D. x 1.975 lg.		Low energy electrons > 40 o key and genme or X-Raye < 9A
	-	_	_	-		2# windowiese flow countrs for measurement of siphs and low energy bets particles.
	1 - 1.5 mg/cm ²	0.3437	0.3437 O.D. x 1.562	0.687 O.D. x 3 lg.		Low energy electrone > 30 o key end gemma or X-Reys ₹ 11A
	1.4 - 2 mg/cm ²	-	0.5 O.D. x 1.75	0.5 O.D. x 3 ig.		Low energy electrose > 35 0 kev and gamma or X-Rays = 10A
	1.4-2.0 mg/cm ²	0.360	0.5 O.D. x 1.75	0.5 O.D. x 3		Ruggedized low energy X-Ray and gamma Detector
	1.4-2.0 mg/cm ²	0.360	0.5 O.D. * 1.75	0.5 O.D. x 3		Ruggedized Low energy X-Ray and gamma detector
	30-40 mg/cm ²	_	7 × 0.625 O.D.	0.625 x 11.781 (4 pin base)		Beta & Gamma
	250 mg/cm ²	_	1.57 x 0.57 I.D. x 250 mg/cm ²	0.594 x 1.687	Unlimited by use	Gamma
	2-3 mg/cm ²	0.35	1.57 x 0.57 1.D. x 250 mg/cm ²	0.594 x 1.687	mited	Beta, Gamma
	1.5-2 mg/cm ²	0.78	1.422 x 0.781 l.D. x 0.047 wall	1.015 x 2.25	ווייח	Alpha, Bets, Gamma
1	2.5-3.5 mg/cm ²	1.09	1.422 x 1.094 l.D. x 0.05 wall	1.344 x 2.25		Beta, Gamma

⁴ Shielded with 2" mercury within 4" iron.

⁵ Can be used in radiation fields up to 200 roentgens per hour.

⁶ Can be used in radiation fields up to 20-50 roentgens per hour.

⁷ Can be used in radiation fields up to 500-1000 roentgens per hour.

⁸ At 100 counts per second, R = 10, megohms.

RADIATION COUNTER TUBES (PERMANENT SENSITIVITY) (Continued)

TYPE NO.	Filling	Operating Voltage D.C.	Ploteau	Slope Ploteou	Dead Time (Approx. μ sec.)	Background C/M (Shielded 2" Lead)
18508	Neon, argon + halogen admixture	Arbitrary within plateau range	650-900 volts	4%/100 voits max.	350	150
18509 ⁵	Neon, argon + halogen quenching agent	arbitrary, within plateau range	400-550 volts	0.07%/voit avg. 0.15%/voit max.	60	2 max.
18510	Neon, argon or halogen admixture	Arbitrary within plateau range	500-700 volts	7%/100 volts		15
18515	Neon, argon, + halogen quenching admixture	550	450-650 volts	3% per 100 volts	150	5 max, 4
18516	Neon, argon, + halogen quenching admixture	550	450-650 volts	3% per 100 volts	200	8 max, 4
18517	Neon, argon, + halogen quenching admixture	1000	800-1200 volts	4% per 100 volts	1000	80 max. ⁴
18518	Neon, argon, + halogen quenching admixture	1000	800-1200 volts	4% per 100 volts	1000	80 max, 4
18522	Neon, argon + halogen admixture	Arbitrary within plateau range	700-1000 volts	3%/100 volts	500	100 c/hr.
18526	Neon, argon + hatogen admixture	Arbitrary within plateau range	450-750 volts	2%/100 volts	200	20
18529*	Neon, argon, + halogen quenching agent	arbitrary, within plateau range	500-650 volts	25%/volt max.	-	1
18536	Neon, argon + halogen admixture	Arbitrary within plateau range	500-750 volts	3%/100 volts	70	10
18546	Neon, argon + halogen quenching agent	Arbitrary within plateau range	700-1000 volts	3%/100 volts	30 µsec.	50
185 50 6	Neon, argon, + halogen quenching agent	arbitrary, within plateau range	500-650 volts	0.04%/volt. max.*	75	5 max.

NOTE: All cathodes are stainless steel. Operating temperature range, -55°C to +75°C.

NEUTRON DETECTORS

TYPE NO.	Filling	Operating Valtage	Resolution	
B300D Series	Argon	200-500	**	
BF101S6 BF102S6	Boron trifluoride enriched in B ¹⁰ to 96%	2100	25% max.	
BF101S8 BF102S8	Boron trifluoride enriched in B ¹⁰ to 96%	2100	25% max.	
BF101S11 BF102S11	Boron trifluoride enriched in B ¹⁰ to 96%	2100	25% max.	
F175D5	Argon	500		

Detailed data available upon request.

Also available in 600 volt operating voltage. Specify Type *6.

For 900 volt operation, specify Type *9.

Also available with 3 Pin Base, specify Type 912NB-3. Overall tube length = 11-3/8".

Average Mica Window or Wall Thickness	Effective Dia. af Mica Window (Inches)	Effective Cathode Dimensians (Inches)	Max. Overall Tube Dimensions (Inches)	Life Expectancy (Caunts)	Application
Wall Thickness 650 mg/cm ²		2.756 x 2.362 l.D.			Well-Type Gamma Counter
80-100 mg/cm ¹	_	0.063 x 0.197 O.D. x 80-100 mg/cm ³	0.281 x 1.5		Gamma
2·3 mg/cm ²	0.35	1.417 x 0.583 1.D.	3.228 x 0.748 O.D.		Flow through type counter for Beta & Gamma in liquids.
1,5-2,0 mg/cm ²	0.781	0.5 x 0.781 O.D. x 0.046 wall	1.031 × 1.281		Beta
10 mg/cm ²	1.093	0.718 x 1.093 l,D. x 0.062 wall	1.344 x 1.468	aso Ac	Beta
+-	-	-	. –	Unitimited by use	Gamma & Cosmic Ray
-		_	-	Unfin	Gamma & Cosmic Ray
0.020 inches		15.8 x 1.54 O.D.	18.1 x 1.614 O.D.		Large Volume Gamma or Cosmic Ray use.
1.5-2 mg/cm	1.09	1.46 x 1.1 l.D.	2.249 x 1.217 O.D.		Alpha, Beta and Gamma
80-100 mg/cm ²	-	0.328 × 0.187 l.D. × 80·100 mg/cm ²	1.062 x 0.203		Gamma
1.5-2mg/cm	1.09	1.09 l.D. x 0.67	1.339 x 1.339 O.D.		Beta
10 mg/cm ²	2.00	1.102 x 2.007 1.D.	1.930 x 2.284 O.D.		Beta
36 ± 4 mg/cm ²	-	1,062 × 0,31 l,D,	0.391 x 2.125		Beta, Gamma

Shielded with 2" moreury within 4" iron.
Can be used in radiation fields up to 200 roentgens per hour.
Can be used in radiation fields up to 20-50 roentgens per hour.
Can be used in radiation fleids up to 500-1000 roentgens per hour.
At 100 counts per second, R = 10, megohms.

	Neutron Sensitivity	Max. Operating Temperature	Background	Effective Cathode Dimensions (Inches)	Application
	1c/S/10 ³ n to 1c/S/10 ⁸ n	+290°C	<1c/hr	Window Diameter 66 cm	Monitoring neutron beams from reactor experimental holes
	6.6 c/S/ unit flux	75°C	<1c/S	1.00 O.D. x 6.375	Available with either MIIV or HN type connector
	9.3 c/S/ unit flux	75°C	<1c/S	1.00 O.D. x 8.75	Tubes are available in either S. S. or Aluminum
_	11.7 c/S/ unit flux	75°C	<1c/S	1.00 O.D. x 11.375	
•	1c/S per 10n/ cm²/sec. 0.6 c/hr.		<1c/hr	O.D. $-1^{3}/_{4}$ Length $-7^{3}/_{8}$	Reactor Monitoring and Control

RECTIFIERS - OIOOES

TYPE NO.	FILA	MENT	FII. Heating	Tube Drop	Peak Inverse Anode Volts	ANODE C	URRENT	Surge Current	TEMPER.
TIPE NO.	Volts	Amps	Time (sec)	(Volts)	(Volts)	Peok Amps	Averoge Amps	Amps	Ambient
3B-28	2,5	5. 0	5	10,0	10,000	1.0	0.250	_	-
4B-32	5.0	7,5	30	10.0	10,000	5.0	1.25	50.0	-
249-B	2, 5	7.5	15	15.0	7,500	2, 5	0.640	_	_
575-A	5, 0	10.0	30	10,0	15,000	6.0	1.5	60.0	_
673	5,0	10.0	30	10.0	15,000	6.0	1.5	60.0	
857-B	5,0	30.0	60	10.0	22,000	40,0	10,0	400,0	-
866-AX	2, 5	5.0	20	10.0	10,000	1,0	0,250	_	-
869-B	5,0	18.0	60	10,0	20,000	10.0	2.50	_	_
869-BL	5.0	18,0	60	10.0	20,000	10.0	2.50	+-	-
872-AX	5,0	7,5	30	10.0	10,000	5,0	1,25	50.0	-
							WITH LIQUI	D COOLING	
6339	6.3	1,5	30	_	16,000 10,000	0,250 0,400	0.065 0,100	-	-6510+165°
						WITHO	UT COOLING	- AIR OPE	RATION
					12,000	0.200	0.050		-55 to +85°
6508	5.0	12.5	90	12.0	21,000	10.0	2.5	100,0	-
6693	5.0	11.5	60	12.0	2,500	10.0	5.0	200.0	+15 to +55°
					15,000	12.0	3.0	120.0	+15 to +35°
7136	5.0	11,5	60	12,0	15,000	12.0	2,5	120.0	+15 to +35°
8008·AX	5.0	7,5	30	10.0	10,000	5.0	1.25	50.0	-
8020-AX	5,0	6.0	5	200V at 100ms	40,000	0.750	0, 100	-	

MICROWAVE TRIODES

	FILA	MENT	Plate		Trans-	PL	ATE	POWER	OUTPUT	CHARACTE	RISTICS
TYPE NO.	Volts	Amps	Dissi. pation (Wotts)	Mu	ductance (microm- hos)	Volts	Amps	Power (Wotts)	Goin (DB)	Bandwidth (mc)	Frequency (mc)
								2.8	osc	osc	1,000
5861/EC55	6.3	0.4	10	30	6,000	250 0.	0.020	0.5	osc	osc	3,000
	-							1.8	8	50-0.1 db	4,000
								0.5	13	50-0.1 db	4,000
8108	6,3	0.73	10	43	21,000	180	0.060	0.5	19	25-3.0 db	3,000
1								0.25	0	Doubler	6,000
								5	В	50-0.1 db	4,000
EC158	6.3	0.85	30	30	25,000	180	0.140	2	12	50-0.1 db	4,000

PHOTOMULTIPLIER TUBES

TYPE NO.	Min. Us eful Photocathode Diometer (mm)	Number of Stoges	Base	Moximum Spectrol Response (Angstroms)	Reso- lution C e 137	Minimum Photocothode Sensitivity (µA/Im)	Average Photocathode Sensitivity (μΑ/Im)		For a Supply Voltage of (V)	Minimum Goin of 2000 V	•
150 AVP*	32	10	duodeca1	4200		25	50	60	1800	_	

	RANGE (°C)	DESCRIPTION	TYPE NO
	Mercury		
	-	Xenon gas filled half-wave rectifier with wider temperature ranges than mercury-vapor tubes. Used largely by armed services to replace 866-A*s.	313-28
	-	Xenon gas filled half-wave rectifier with wider temperature ranges than mercury-vapor tubes. Used largely by armed services to replace 872-A's.	4B-32
	+25 to +70°	Convection-cooled mercury-vapor half-wave rectifier. Used in most Western Electric r-f equipment.	249-B
	+20 to +50°	Convection-cooled mercury-wapor half-wave rectifier. Refer to 7136 for improved version.	575-A
	+20 to +50°	Convection-cooled mercury-vapor half-wave rectifier. Refer to 6693 for improved version.	673
	+30 to +40°	Mercury-vapor half-wave rectifier with low voltage drop. Extremety popular in most high power broadcasting stations. Convection cooled.	857-B
	+25 to +70°	Mercury-vapor half-wave rectifier of Amperex own design. More rugged trouble-free operation at only slight additional cost. Convection cooled.	856-AX
	+30 to +40°	Mercury-vapor half-wave rectifier. Refer to type 6508, economy version.	869-B
	+30 to +40°	Electrically same as 869.B. Base has flexible filament leads with spade lugs for better, low-resistance contact with socket.	869-BL
	+20 to +60°	Mercury-vapor half-wave rectifier. Universally used by almost every user and designer of H-V equipment. Convection cooled.	872-AX
	_	High vacuum clipper diode and rectifier. Miniature version of 3B29 for tiquid immersion cooling or air operation.	6.339
_			
	+25 to +45°	Mercury vapor rectifier for relatively high voltage and current. A high quality, long-life tube priced lower than any tube in its class on the market.	6508
	+25 to +75° +25 to +55°	Single-anode, mercury vapor rectifier with ratings, intermediate between standard types 575A and 86913. Delivers 9 amps up to 12 KV in a full wave, 3 phase power supply. Three tubes in a three phase half-wave power supply deliver 6 KV at 9 amps using only one filament transformer. Has large contact area, industrial base preventing base contact oxidation. Priced low for replacement market and original equipment.	6693
	+25 10 +550	Single anode, mercury vapor, high voltage rectifier. Plate current ratings intermediate between types 575-A and 6693. Cathode and anode design similar to 6693 but with 575-A base. Recommended replacement for 575-A in older equipment. For new equipment design, the 6693 is recommended.	7136
	+20 to +60°	Mercury vapor half wave rectifier similar to 872-A characteristics, with heavy long pin industrial base. Used by armed services and in commercial applications. Convection cooled.	8008-AX
	- 1	Half-wave, high vacuum rectifier with high inverse voltage and low average current. Used in rudar and precipitator power supplies.	8020-AX

CAPA	CITANCE	5 (pf)	Maximum		
G. P	Input	Οντρνέ	Frequency (mc)	DESCRIPTION	TYPE NO.
1.3	1,8	0.03	3,000	Disc-seal triode, for amplifier and oscillator applications.	5861/EC55
1.4	3.0	0.035	> 6,000	Disc-seal triode, for amplifier, oscillator doubler or tripler applications.	8108
1.75	4.0	0.055	> 6,000	Disc-seal triode, for amplifier, oscillator doubler or tripler applications. Long life.	EC158

•	Average Anode Sensitivity (A/lm)	For a Supply Voltage of (V)	Maximum Direct Dork Current (nA)	For an Anode Sensitivity of (A/Im)	Or a Goin of	Moximum Anode Dissipation (W)	Rotio Luminos Current Li (voltage distri- button A, see instr. for use) (mo)	,	TYPE NO.
	300	1800	50	60	_	0.5	30	100	150 AVP

PHOTOMULTIPLIER TUBES

TYPE NO.	Min. Useful Photocathode Diameter (mm)	Number of Stages	Base	Maximum Spectral Response (Angstrams)	Reso- lution C s- 137	Minimum Phatacathode Sensitivity (J.A/Im)	Average Phatacathode Sensitivity (µA/Im)	Minimum Anade Sensitivity (A/Im)	For a Supply Valtage of (V)	Minimum Gain at 1800 V
152AVP	14	10		4200		25	40	30	1800	5x10 ⁶
50 AVP	32	11	duodeca!	4200		25	50	60	1800	
51 UVP	32	11	duodeca!	4000		25	50	60	1800	
52 AVP	20	10	spec. 13 pin	4200		15	30	15	1800	-
53 AVP	44	11	diheptal	4200		25	50	60	1800	_
53 UVP	44	11	diheptal	4000		25	50	60	1800	-
54 AVP	111	11	diheptal	4200		25	50	100	1800	-
55 AVP	44	15	bidecal	4200		25	50	-	-	10
56 AVP	42	14	bidecal	4200		_	50	_		108
57AVP	200	11	diheptal	4200				60	1800	5- 106
58AVP	110	14	bidecal	4200		-	50	_	3000	> 10 ⁸
150 CVP	32	10		8000		-	20	100	1800	5-10
153 AVP		11	diheptal		<9%	For a	II other chact	eristics, se	9 53 AVP	
XP1010					<9%		ected for low			
XP1030	63.5	10		4200		40	60	100	1800	4x 10 ⁶
XP1031	63.5	10	-	4200	<9%	40	70	100	1800	4x10 ⁶

INSTRUCTIONS FOR USE - To take full advantage of the possibilities offered by the Amperex photomultipliers and to insure a long life of the tubes, the following rules must be observed,

Valtage distribution	A ¹	В
Between D ₁ and PK	1.5 V ₀ ²	2 V ₀ ²
Between D ₂ and D ₁	V ₀ ³	V ₀ ³
Between D ₃ and D ₂	v ₀	v _o
Between D _{n-3} and D _{n-4}	v _o	v _o
Between D and D n-3	v _o	1.25 V ₀
Between D and D n-2	v _o	1.5 V ₀
Between D and D n-1	v _o	1.75 V ₀
Between anode and D	0.75 V ₀	2 V ₀

When the supply voltage is low, special attention has to be paid to the fact that the voltage between photocathode and dynode No. 1 may never be less than 180 V and that the voltage between the other electrodes may never drop below 80 V. (With the tubes 50 AVP and 51 UVP between D₃ and D₁ at least 160 V.)

In case of gamma-spectrometry this must be between 2 and 3V₀

 3 With the tubes 50 AVP and 51 UVP between $\mathrm{D_3}$ and $\mathrm{D_1}$: 2V₀

⁴n means last dynode i.e.;

n = 10 for the 150 AVP and 52 AVP n = 11 for the 50 AVP, 51 UVP, 53 AVP, 53 UVP and 54 AVP

n = 14 for the 56 AVP

n = 15 for the 55 AVP

COUNTING SELECTING and INDICATING TUBES.

	FILA	MENT					
77PE NO. 6370/E1T 6977 ¹ ETS1 Z303C Z502S	Voltz	Amps	Maintaining Valtage (V)	at Cathade Current (μ a)	Maximum Caunting Rate (KC)	810s (V)	Minimum A-K Ignitian Voltage (V)
6370/E1T	6, 3	0.3	_	_	100	_	_
6977 ¹	1.0	0,3	Anode; 50 DC			out at 3.5 grid volts output at 0 grid vol	
ET51	6.3	0, 3	T:100 S: 100	T:5.5 S: 1.0	1,000	+25 V (Grid)	
Z303C		_	186 to 196	300	4	+35 Guide - 20 Cath.	_
Z502S		_	186 to 196	300	4	+35 Gulde - 20 Cath.	_
Z503M	_	_	108	60	_	-	129
Z550M		_	82	3 ma		Fires on 5 V about	ove common
NF00649	24	0,125	Small, compact,	selective, digita	I Indicator (Gre	een)	
NF00650	24	0,125	Small, compact,	, selective, digita	al indicator (Or	ange)	

								us Flux/Anode inear up to	_
•	Average Anode Sensitivity (A/Im)	For a Supply Voltage of (V)	Maximum Direct Dark Current (nA)	For an Anade Sensitivity of (A/Im)	Or o Goin of	Maximum Anade Dissipation (W)	(voltage distri- bution A, see instr. for use) (ma)	(voltage distri- bution B, see instr. for use) (ma)	TYPE NO.
	150	1800	100	30	_	0.5	5	10	152 AVP
	500	1800	50	60	_	0.5	30	100	50 AVP
	500	1800	50	60	_	0.5	30	100	51 UVP
	30	1800	100	1.5	_	0.5	5	10	52 AVP
	500	1800	50	60	_	0.5	30	100	53 AVP
	500	1800	50	60	_	0.5	30	100	53 UVP
	500	2000	500	250	-	0.5	30	100	54 AVP
	-		5000	-	108	0.5	30	100	55 AVP
	_	_	5000	-	10°	1	100	300	56 AVP
	500	_	1000	60	_	0.5	30	100	57AVP
	_	_	10000	_	108	1	100	300	58AVP
	100	1800	10000	20	_	0.5	30	100	150CVP
									153AVP
									XP1010
	250	1800	200	100		0.5	50	100	XP1030
	300	1800	200	100		0.5	50	100	XP1031

TRAVELING WAVE TUBES

			Frea. Ronge	7	HEA	TER	Helix	Mog.	Goin	Power	
	TYPE	Description	Freq. Ronge Kmc	Type Output	Volts	Amps	Voltage (volts)	Fleid (Gauss)	(4P)	Output Watts	
ľ	55340	Amplifier	3.8-4.2	Waveguide	6.3	0.8	1100	600	37	5	
	7537	Amplifier	4.4-5	Waveguide	6, 3	0,8	1100	600	34	3.5	

K Reset Valtage (V)	DESCRIPTION	TYPE NO.
_	Special beam deflecting decade counter with numerals 0 to 9 for scalers, computers, etc.	6370/E1T
	Subminiature vacuum triode with fluorescent anode particularly suited for transistorized circuits. 20,000 hour life.	69771
	Ultra-fast beam-switching decade counter for scalers, analyzers, etc.	ET51
-120	Cold cathode bi-directional visual indicating decade counting tube.	Z303C
-120	Cold cathode bi-directional visual indicating decade selector tube.	Z502S
Ext'ing 105 V	Cold cathode decade indicator tube,	Z503M
	Cold cathode decade numerical indicator tube especially designed for transistorized circuits.	Z550M
		NF00649
		NF 00650

COLD CATHODE TRIGGER TUBES

TYPE NO.	Anade Valtage Range (V)	Starter-ta- Cathade Breakdawn Valtage (V)	Anode to Cathode Burning Valtage (V)	Anade ta Cothode Breakdown Voltage (V)	Recommended Priming Resistor (megohms)	Cathode Current Range (ma)	Peak Cathade Current ¹ (ma)	
5823/Z900T	140-200 dc 117 ac	73-105	62	> 200		25 (max.)	100	
7709/Z70W	200-310	137-153	111-121	> 325	18	2-4	16	
7710/Z70U	200-310	137-153	111-121	> 325	18	2-4	16	
7711/Z71U	125-165	73-90	54-68	> 175		3-72	12	
7713/Z804U	180-350 dc 180-275 ac	-115 to -131	106-115	> 400		5-40 dc 5-25 ac	125	
7714/Z805U	250-450 dc 180-275 ac	137 - 155 dc 98 - 110 ac	118-128	> 500		5-25	150	
Z803U	170-290	128 - 137	105	> 290	10	25 (max.)	100	

Higher peak currents are permissible in pulse forming circuits. *For passing speech current in intermittent use, 7 to 9 ms is recommended,

IGNITRONS-WELDER CONTROL SERVICE

TYPE NO.	R.M.S. Valts		A Demond & ing Average rrent	Maximum Aver Correspond Demo	ding KVA	Type Cooling
	Range	K.V.A.	Amps	K.Y.A.	Amps	
5555/653B	2400	2400	135.0	1105	207	Water
5822-A	220-600	424	20	188	70	Water

IGNITRONS-RECTIFIER SERVICE

TYPE NO.	Typical D.C. Output Valtage (v)	Maximum Peak Inverse & Farward Valtage (v)	Maximum Peak Anode Current (A)	Max. Cantinuous Average Anode Current (A)	Maximum Average Current (A) 1 minute	Type Coaling
AX5555	300 ¹ 600 ¹	900 2100	1800 1200	200 150	400 300	Water

¹Spread in operating voltage from tube to tube at recommended quiescent current.

IGNITRONS-THERMOSTATICALLY CONTROLLED 1

R.M.S. TYPE NO. Volts		NO. Valts Current		Maximum Avero Carrespand Dema	Type Cooling	
	Range	K.V.A.	Amps	K.V.A.	Amps	
AX5551·A	250-600	600	30.2	200	56	Water
AX5552	250-600	1200	75.6	400	140	Water
5553·B	250-600	2400	192.0	800	355	Water
AX5822	220-600	424	20.0	188	70	Water

These tubes are identical with the corresponding types 5551, 5552 and 5553 except that they are fitted with a "sensing" plate for adaptation of a thermostat. They do not include the thermostat or thermostat mounting under these designations. If thermostatic control is required, one of the following accessory groups should be ordered with each tube:

- (A) AMPEREX "Water Saver" Thermostat Assembly, Cat. No. S-17024. (Consists of Thermostat No. C4391-7-51, mounting clamp, terminal block and four sets of nuts, bolts and washers).
- (B) Amperex "Overload Protection" Thermostat Assembly, Cat. No. S-17025. (Consists of Thermostat No. C4391-7-52, mounting clamp, terminal block and four sets of nuts, boits and washers).

KLYSTRONS (Listed in order of frequency range)

		Freq. Range	HEA	TER	Beam	Re- flector	Веот	ETR	
TYPE	DESCRIPTION	mc	Volts	Amps	Valtage (volts)	Voltage (volts)	(mo)	mc	Po(W)
6975	OSC, Reflex, Tunable	8500-9600	6.3	0.45	300	160-230	30	50	0.040
DX184	OSC, Reflex, Tunable	31000-36000	6.3	0.8	2250	100-500	15	60	0.100
DX151	OSC, Reflex, Tunable	67000-73000	3.5	1.75	2450	300	17	100	0.100

Typical C Starter Current (μα)	Maximum Negative Starter Current (μa)	Maximum Ambient Temperature (°C)	DESCRIPTION	TYPE NO.
100		70	Three electrode, gas filled relay tubes for 'lon-off' control of a low-voltage apparatus.	5823/Z900T
30	150	70	Subminiature tube with priming cathode and positive starter voltage for de circuit.	7709/Z70W
20	150	70	Subminiature tube with priming cathode and positive starter voltage, for dc circuit.	7710/Z70U
40		70	Subminiature tube with two starters for counting and switching in dc circuit,	7711/Z71U
-50		70	T-6½ tube with high inverse breakdown voltage. Negative dc trigger.	7713/Z804U
50		70	Minjature relay tube for ac circuits, short ignition delay and excellent high voltage properties.	7714/Z805U
50		70	Stable trigger striking characteristic for positive triggering.	Z803U

VOLTAGE REFERENCE & REGULATOR TUBES

TYPE NO.	Operating Valtage (Apprax. Valts)	Operating Valtage Limits ¹ (Volts)	Recommended Oviescent Current (Milliamperes)	lgnition Valtage ² (Volts)	Internal Resistance (Max, Ohms)	Cuttent Range (Milliampetes)	Regulation ³ (Max. Volts)
OA2	150	144-164	17.5	185 max.	240	5-30	6
OB2	108	106-111	17.5	133 max.	140	5-30	3.5
OE3/85A1 5 6	85	83-87	4	120 max.		1.8	3.15
OG3/85A2 ^{8 6}	8.5	83-87	6	125 max.	450	1-10	4
90C1	90	8ti-94	20	125 max.	350	1-40	14
5651"	87	82-92	2.5	115 min.		1.5-3.5	.3
6354/150B2	150	146-154	10	180 max.	500	5-15	5
8228/ZZ1000	82	81-84	2	115 max.	500	0.5-3.5	1

¹Sphead in operating voltage from tube to tube at

MAGNETRONS (Listed in order of frequency range)

		Freq. Range	Freq. Range HEATER		$\varepsilon_{_{A}}$	l _A	Duty	Pulling	Type ¹	Pulse	
TYPE	DESCRIPTION	mc	Volts	Amps	(KV)	(Amps)		Figure (mc)	Output	Dur. (μ sec.)	Po(KW)
7090	CW Osc. Fixed Frequency	2425-2475	5.3	3.2	16	0.200	CW	5	co	CW.	.200
7091	CW Osc. Fixed Frequency	2425-2475	.5	32	4.5	0.75	CW	4	CO	CW.	2.5
7292	Same as 7091 except liquid o	ooled. 7091 is fo	rceilair	cooled.							
55125	CW Osc, Fixed Frequency	2425-2475	5	66	6.3-6.6	1.4	CW	_	CO	CW	5.0
5586	Osc. Tunable	2700-2400	16.0	3	27-32	70	.0005	1.5	co	1	800
5657	Osc. Tunable	2900-3100	16.0	3	27.5- 32.5	70	.0005	15	CO	1	800
6589	Osc. Tunable	3350-3500	16.0	3	26-30	50	.0005	10	WG	1	500
4J59	Osc. Fixed Frequency	6275-6375	12.6	3. 5	16-19	30	.001	1.5	WG	1	210
4158	Osc. Fixed Frequency	6375-6475	12.6	3.5	16-19	30	.001	15	WG	1	210
4J57	Osc. Fixed Frequency	6475-6575	12.6	3.5	16-19	30	.001	15	WG	1	210
2J51	Osc. Tunuble	8500-9600	6.3	1.0	14	14	.001	18	WG	1	63
7093	Osc. Fixed Frequency	34,512-35,208	4	4	13.5 - 15	15.5	.0001	40	WG	0.02	25

CO = Coaxia1

Power full current runge

Voltage Reference Tubes

⁵Drift in operating voltage during the first 300 hours of life; max, 0.3%. Short term drift in operating voltage (100 hours max,) after

Temperature coefficient of operating voltage = -2.7 my OD Drift in operating voltage during 1000 hours; max, 1%

WG = Waveguide

INDEX

AGR99510 10 ECC8B 14 INS/DMT1 18 6CW5/KLE8 14 AX105 10 ECT80 14 ECC8B 15 ISSA 12 GEW5/KLE8 14 AX105 10 ECT80 14 ECT80 11 SSA 12 GEW5/KLE8 14 AX105 10 ECT80 16 ECT80 11 ECT80 11 GERS 12 GEW5/ELB8 14 AX255 10 ECT86 16 EZERS 12 GEW5/ELB8 14 AX260 10 ECH84 16 EZERS 12 GEW5/ELB8 14 AX3551 A 34 ECL82 14 ZUKS 12 EDIA/FC8B 14 AX3552 34 ECL85 11 ZUKS 12 EDIA/FC8B 14 AX3552 34 ECL85 11 ZUKS 12 EDIA/FC8B 14 AX3552 34 ECL85 11 ZUKS 12 EDIA/FC8B 14 AX3552 34 ECL85 11 ZUKS 12 EDIA/FC8B 16 AX3990 See S866 EEG 14 ZUKS 11 ZUKS 12 EDIA/FC8B 16 AX3990 See S866 EEG 18 3 EUR/FF 18 ZUKS 12 EDIA/FC8B 16 AX3990 See S868 EF88 18 3 EUR/FF 18 ZUKS 12 EFR 24 ZUKS 12 EDIA/FC8B 16 AX3990 See S868 EFR 25 ZUKS 12 EDIA/FC8B 16 AX3990 See S868 EFR 25 ZUKS 16 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 18 ZUKS 12 EDIA/FC8B 16 ZUKS 12 ZUKS 1	Type No.	$\underline{\mathbf{p}_{\mathrm{age}}}$	Type No.	Page	Type No.	Page	Type No.	Page
ACH99691 10 ECC189 16 ISA 12 COBAS/E89 14 AX1056 10 EC F86 16 2ERS 12 ODAS/ERS9 14 AX256 10 EC F86 16 2ERS 12 ODAS/ECC88 14 AX256 10 EC H84 16 2FYS 12 ODAS/ECC88 14 AX256 10 EC H84 16 2FYS 12 ODAS/ECC88 14 AX256 10 EC H84 16 2FYS 12 ODAS/ECC88 14 AX256 11 COBAS/ECL84 14 AX5651-A 34 ECL82 14 2GKS 12 ODAS/ECL84 16 AX552 34 ECL86 16 3B-28 30 OEB ES F164 16 AX552 34 ECL86 16 3B-28 30 OEB ES F164 16 AX5600 Sec 5866 EF80 14 3C23 10 OEB ES F164 18 AX5600 Sec 5866 EF80 14 3C23 10 OEB ES F164 18 AX5600 Sec 5867 EF86 18 3EHY/KF183 12 OFG/EMS4 18 AX5600 Sec 5867 EF86 18 3EHY/KF183 12 OFG/EMS4 18 AX5600 Sec 5867 EF86 18 3EHY/KF183 12 OFG/EMS4 18 AX5600 Sec 5867 EF86 18 3EHY/KF184 12 OFG/EMS4 18 AX5600 Sec 5823 EF183 16 3EKS 12 OGBS/EC189 16 AX5600 Sec 5867 EF86 18 3EHY/KF184 12 OFG/EMS4 18 AX5600 Sec 5867 EF86 18 3EHY/KF183 12 OFG/EMS4 18 AX5600 Sec 5867 EF86 18 3EHY/KF183 12 OFG/EMS4 18 AX5600 Sec 5867 EF86 18 3EHY/KF183 12 OFG/EMS4 18 AX5600 Sec 5867 EF86 18 3EHY/KF183 12 OFG/EMS4 18 AX5600 Sec 5867 EF86 16 3EKS 11 OGBS/EC185 16 AX5600 Sec 5867 EF86 16 3EHS 11 OFG/EMS4 18 AX5600 Sec 5867 EF86 18 3EHS 14 OFG/EMS4 18 AX5600 Sec 5867 EL36 14 OFG/EMS4 18 AX5600 Sec 5867 EL36 14 OFG/EMS4 18 AX5600 Sec 5867 EL36 14 OFG/EMS4 18 AX5600 Sec 5868 Sec 5867 EL56 14 OFG/EMS4 18 AX5600 Sec 5868 EMS7 18 OFG/EMS7 18 AX5600 Sec 5868 EMS7 18 OFG/EMS7 18 AX5600 Sec 5868 EMS7 18 OFG/EMS7 18 AX5600 Sec 5868 EMS7 18 OFG/EMS7 18 AX5600 Sec 586	AGR9950	10	ECC88	14	1N3/DM71	18	6CW5/EL86	14
AX105 10 EC F80 14 2D21 10 6DCB/EB R89 14 AX2870 10 EC F86 16 2ERS 12 6DLB/ECC88 14 AX2870 10 EC F86 16 2ERS 12 6DLB/ECC88 14 AX28751 A 34 ECL84 14 2GKS 12 6DLB/ECR8 14 AX5552 34 ECL84 14 2HA3 12 6EBT/KF183 12 6EBT/KF183 16 AX5553 A 4 ECL88 16 2BT 3 3 6EBT/KF183 16 AX5550 Sec F86 18 3 16 2BT 3 3 6EBT/KF183 16 AX5500 Sec F86 1E F80 14 3CC23 3 0 6EBT/KF183 16 AX5900 Sec F86 1E F80 14 3CC23 3 0 6EBT/KF183 16 AX5900 Sec F86 1E F80 14 3CC23 3 0 6EBT/KF183 16 AX5900 Sec F86 1E F80 14 3CC23 3 0 6EBT/KF184 16 AX5900 Sec F86 1E F80 14 3CC23 3 0 6EBT/KF184 16 AX5900 Sec F86 1E F80 14 3CC23 3 0 6EBT/KF184 16 AX5900 Sec F86 1E F80 14 3CC23 3 0 6EBT/KF184 16 AX5900 Sec F86 1E F80 14 3CC23 3 0 6EBT/KF184 16 AX5900 Sec F86 1E F80 14 3CC23 3 0 6EBT/KF184 16 AX5900 Sec F86 1EB 14 14 3CC23 3 0 6EBT/KF184 16 AX5900 Sec F86 1EB 14 14 3EBT/KF183 12 6EBT/KF184 16 AX5900 Sec F86 1EB 14 14 3EBT/KF184 12 6FTG/EM84 18 AX5900 Sec F86 1EB 14 14 3EBT/KF184 12 6FTG/EM84 18 AX5900 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KF184 18 AX5900 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5900 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5900 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 14 4B-32 3 0 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 4GBT/KF184 12 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 4GBT/KF184 12 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 4GBT/KF184 12 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 4GBT/KF184 12 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 4GBT/KF184 12 6GBT/KCC86 16 AX5901 Sec F86 1EB 14 4GBT/KF184 12 6GBT/KF184 12 6GBT								
AX255 10 ECF86 16 2FRS 12 6DJ8/ECC88 14 AX2561-A 34 ECL82 14 2GKS 12 6DJ4/EC88 14 AX3551-A 34 ECL82 14 2GKS 12 6DJ4/EC88 14 AX3555 34 ECL88 16 2J51 35 6EJ7/EF183 16 AX3552 34 ECL88 16 2J51 35 6EJ7/EF184 16 AX3522 34 ECL88 16 3B-28 30 6EBS/ECC189 16 AX3500 Scc 5866 EF80 14 3C22 AX3500 Scc 5866 EF80 14 4C35 10 6CWS/ECL85 16 AX3500 Scc 5867 EL86 14 4C35 10 6CWS/ECL85 16 AX3500 Scc 5867 EL86 14 4C35 10 6CWS/ECL85 16 AX3500 Scc 5867 EL86 14 4C35 10 6CWS/ECL85 16 AX3500 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 AX3500 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 AX3500 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C35 10 6CWS/ECL86 16 Scc 5867 EL86 14 4C								
AX260 10 ECH84 16 2 FY5 12 6DL4/EC88 14 AX5551								_
AX5551-A								
AX55552 34 ECL84 14 ZHA5 12 6EHY/EFR83 16 AX55522 34 ECL85 16 2J51 35 6EJ7/EFR84 16 AX55822 34 ECL86 16 3B-28 30 6EJR5 16 AX5900 Sec 5866 E F80 14 3C23 AX9900 Sec 5866 E F80 14 3C23 AX9900 Sec 5867 E F86 18 3EH7/XF183 12 6FG8/EC189 16 AX9904 Sec 5823 EFR8 14 3EJY/XF184 12 6FG8 AX9904 Sec 5823 EFR8 16 3ER5 12 6GBS/EC108 16 AX9904 Sec 5827 EFR8 16 3FFS 12 6GBS/EL50 16 AX9908 Sec 6077 EL53 16 3FFS 12 6GBS/EL50 16 AX9908 Sec 6077 EL53 14 4 4B-32 30 6GBS/EL50 16 AX9909 Sec 6078 EL58 14 4 4B-32 30 6GBS/EL50 16 AX9909 Sec 6076 EL58 14 4 4B-32 30 6GBS/EL50 16 AX9909 Sec 6076 EL58 14 4 4B-32 30 6GBS/EL50 16 AX9909 Sec 6083 EM34 18 4CX250B 2 6HGS/ECL85 16 AX9901 Sec 628 EM87 18 4CX250F 2 6HGS/ECL85 16 AX9901 Sec 628 EM87 18 4CX250F 2 6HGS/ECL85 16 AX9901 Sec 628 EM87 18 4CX250F 2 6HGS/ECL85 16 B3000 Series 2 EFR8 16 4EFS 12 6GBS/ECL80 16 B5000 Series 2 EFR8 1 16 4ES8 12 6GB/ECR87 16 B5000 Series 2 EFR8 1 16 BF101SS 2 EFR8								
AX56555 34								
AX8900 See 5866 E 580 14 3C23 10 6E8F5 16						_		
AX9900 Sec 5866 E F80								
AX9901 Sec 5867					T			
AX99002 See \$868								
AX9904 See 5923	AX9901	See 5867	E F86	18	3EH7/XF183	12		18
AX9904R See 5924	AX9902	See 5868	E F89	14	3EJ7/XF184	12	6 FY5	16
AX9900 See 6077	AX9904	See 5923	E F183	16	3ER5	12	6GB5/EL500	16
AX9900R See 6078 EL34	AX9904R	See 5924	E F184	16	3 FY5	12	6GJ7	16
AX9900R See 6078 EL34	AX9906	See 6077	E FP60	22	3GK5	12	6GK5	16
AX9907 See 6075	AX9906R	See 6078			3HA5	12	6GM8/ECC86	16
AX9907 See 6076	AX9907			14	4B-32	30		16
AX9908 See 6079 EL500 16 4D21 2 6HA5 16								16
AX9900 See 6083 EM34 18								
AX9910 See 6252 EM84				·				
AX9911 See 8268 EM87								
AX9912 See 6279 E751 32 4EIT/YF184 12 6JX8/ECH84 16 B300D Sories 28 EY81 16 4ES8 12 6Q4/ECB0 22 EFI0156 28 EY88 12 4GJ7 12 6R4/EC81 22 EFI0158 28 EZ80 16 4GK5 12 6R4/EC81 22 EFI0158 28 EZ81 14 4HA5 12 6R4/EC81 18 EFI0258 28 EFI75D5 28 4J57 35 6V4/EZ80 16 EFID258 28 EFI75D5 28 4J59 35 EFI75D5 28 EFI75D5 28 EFI75D5 28 EFI75D5 28 4J59 35 EFI75D5 28								
B300D Scries								
BFI01S6 28 E 280 16 4GJT 12 6R3/EY81 16 BF101S9 28 E 280 16 4GK5 12 6R4/EC81 22 BF101S9 28 E 281 14 4HA5 12 6U8 16 BF102S8 29 F175D5 28 4J57 35 6V4/EZ80 16 BF102S11 28 F095 10 4J58 35 7HG8/PC86 16 BF102S11 28 CZ34 12 4J59 35 7HG8/PC86 16 C3J 10 HF200 4 4W300B 2 8BS5 16 C3JA 10 HF200 4 4W300B 2 8BS5 16 C3JA 10 HF201A 4 4W300B 2 8BS5 16 C3JA 10 HF201A 4 4W300B 2 8BS5 16 C6JA 10 HF300 4 4X150A 2 9A8/PCF80 18 DM70 18 NF00649 32 4X150D 2 12ATT/ECC81 18 DM71 18 NF00650 32 4X250B 2 12AUT/ECC81 18 DM71 18 NF00650 32 4X250B 2 12AUT/ECC82 18 DX181 34 OA2 35 4X250F 2 12AXT/ECC83 18 EJT 32 OS3/SA1 35 4-65A 2 16AQ5/XY88 18 EBOCC 20 OG3/S5A2 35 4-125A/4D21 2 17EW8 18 EBOF 20 PCF80 18 4-250A/5D22 2 27GB5/PL500 18 EBOT 20 PL84 18 5AR4/CZ34 12 5DAVP 32 EBOT 20 PL84 18 5AR4/CZ34 12 5DAVP 32 EBOT 20 PL84 18 5C22 15 5DAVP 32 EBOCC 20 XF183 12 5D22 2 15UVP 32 EBOCC 20 XF184 12 5ESS 12 5SAVP 32 EBOCC 20 XF183 12 5D22 2 51UVP 32 EBOCC 20 XF184 12 5ESS 12 5SAVP 32 EBOCC 20 XF183 12 5D22 2 51UVP 32 EBOCC 20 XF183 12 5ESS 12 5SAVP 32 EBOCC 20 XF183 12 5ESS 12 5SAVP 32 EBOCC 20 XF183 12 6AL5W 14 55AVP 32 EBOCC 20 XF184 12 6AL5W 14 55AVP 32 EBOCC 20 XF184 12 6AL5W 14 55AVP 32 EBOCC 20 XF184 12 6AL5W 14 55AVP 32 EBOCC 20 XF184 12 6AL5W 14 55AVP 32 EBOF 20 YF183 12 6AL5W 14 55AVP 32 EBOF 30 XF184 12 6AL5W 14 55AVP 32 EBOF 30 XF184 12 6AL5W 14 55AVP 32 EBOSC 22 ZS000 35 6AT6 14 75NB3-9 24 EASS 24 ZF1001 34 6BA6 14 75NB3-9 24 EC68 22 ZS03C 32 6BB6/EC85 14 55AVP 32 EBOCC 32 XF184 12 6AL5W 14 55AVP 32 EBOCC 32 XF184 12 6AL5W 14 55AVP 32 EBOCC 32 XF184 12 6AL5W 14 55AVP 32 EBOCC 32 ZS03C 32 6BB6/EC85 14 55AVP 32 EBOCC 32 ZS03C 32 6BB6/EC85 14 55AVP 32 EBOCC 32 ZS03C 32 6BB6/EC85 14 55AVP 32 EBOCC 32 ZS03C 32 6BB6/EC85 14 55AVP 32 EBOCC 32 ZS03C 32 6BB6/EC85 14 56AVP 32 EBOCC 32 ZS03C 32 6BB6/EC85 14 56AVP 32 EBOCC 32 ZS03C 32 6BB6/EC85 14								
BFI01256								
FFIDLS								
BFI012SB								
BFI01S11	BF101S8	28		14			6 U8	16
BFI02SI1	BF102S8	28	F175D5	28	4J57	35	6V4/EZ80	16
BFI02S11	BF101S11	28	FG95	10	4J58	35	6X4	16
C3J 10 HF200 4 4W300B 2 8BQ5 16 C6JA 10 HF201A 4 4W300BF 2 8GJT 16 C6JA 10 HF300 4 4X150A 2 9A8/PCF80 18 DM70 18 NF00649 32 4X150D 2 12ATT/ECC81 18 DM71 18 NF00650 32 4X250B 2 12AUT/ECC82 18 DX151 34 OA2 35 4X500F 2 12AUT/ECC82 18 DX184 34 OB2 35 4X500F 2 12AUT/ECC83 18 DX184 34 OB2 35 4X500F 2 15CW5/PL84 18 EIT 32 OE3/85A1 35 4-65A 2 15CW5/PL84 18 EBOC 20 OG3/85A2 35 4-125A/4D21 2 17EW8 18 EBOC 20 OC3/85A2 35 4-125A/4D21 2 17EW8 18 EBOT 20 PCF80 18 4-250A/5D22 2 27GB5/PL500 18 EBOL 22 PCF86 16 4-400A 2 45B5/UL84 18 EBOT 20 PL84 18 5ARA/G234 12 50AVP 32 EB1L 22 UL84 18 5C22 10 50BM8 18 EB3 F 22 XF183 12 5D22 2 51UVP 32 EB90C 20 XP1010 32 5GJT 12 55AVP 32 E90C 20 XP1030 32 5GJT 12 55AVP 32 E90C 20 XP1030 32 6AJS 12 53UVP 32 E90F 20 XP1030 32 6AJS/EV88 12 54AVP 32 E92F 20 XF183 12 6ALS/EV88 12 55AVP 32 E93F 20 XF183 12 6ALS/EV88 12 55AVP 32 E93F 20 XF183 12 6ALS/EV88 12 55AVP 32 E93F 20 XF183 12 6ALS/EV88 12 55AVP 32 E93F 20 XF183 12 6ALS/EV88 12 55AVP 32 E93C 20 XF183 12 6ALS/EV88 12 55AVP 32 E93F 20 XF183 12 6ALS/EV88 12 55AVP 32 E93F 20 XF183 12 6ALS/EV88 14 55AVP 32 E93F 20 XF183 12 6ALS/EV88 14 55AVP 32 E93F 20 XF183 12 6ALS/EV88 18 5TAVP 32 E93F 20 XF183 12 6ALS/EV88 14 55AVP 32 E93F 20 XF183 12 6ALS/EV88 14 55AVP 32 E93F 20 XF183 12 6ALS/EV88 18 5TAVP 32 E93F 20 XF183 12 6ALS/EV88 18 5TAVP 32 E85C 22 ZB3200 6 6AQ8/ECC85 14 56AVP 32 E188CC 22 ZB3200 6 6AQ8/ECC85 14 56AVP 32 EASS 22 ZZ1000 35 6AT6 14 75NB3-7 24 EAS3 24 Z70U 34 6AU6 14 75NB3-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EA53 24 Z70U 34 6BB6 14 75NB3-7 24 EA56 22 ZB3200 6 6AQ8/ECC85 14 56AVP 32 EC68 22 ZB3200 6 6AQ8/ECC85 14 56AVP 32 EC68 22 ZB3200 6 6AQ8/ECC85 14 56AVP 32 EC68 22 ZB3200 6 6AQ8/ECC85 14 56AVP 32 EC68 22 ZB3200 6 6AQ8/ECC85 14 56AVP 32 EC68 24 ZB3201 34 6AV6 14 75NB3-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EA56 22 ZB3200 6 6AQ8/ECC85 14 56AVP 32 EC68 24 ZB32U 34 6AV6 14 76NB3-7 24 EC68 25 88 24 ZB3U 34 6AV6 14 76NB3-7 24 EC68 26 88 26 ZB3U 34 6CA4/EZ81 14 90CG 24 E	BF102S11	28	GZ34	12	4J59	35	7HG8/PC F86	16
C3JA 10 HF301A 4 4W300BF 2 8GJ7 16 C6JA 10 HF300 4 4X150A 2 9A8/PCF80 18 DM70 18 NF00649 32 4X150D 2 12ATT/ECC81 18 DM71 18 NF00650 32 4X250B 2 12AUT/ECC82 18 DM71 18 NF00650 32 4X250B 2 12AUT/ECC82 18 DX151 34 OA2 35 4X50DA 2 15CW5/PL84 18 BIT 32 OE3/85A1 35 4-65A 2 16AQ3/XY88 18 E80C 20 OC3/85A2 35 4-125A/4D21 2 17EW8 18 E80F 20 PCF80 18 4-250A/5D22 2 27GB5/PL500 18 E80F 20 PCF86 16 4-400A 2 45B5/UL84 18 E80T 20 PCF86 <t< td=""><td>C3J</td><td>10</td><td></td><td>4</td><td>4W300B</td><td>2</td><td>8BQ5</td><td>16</td></t<>	C3J	10		4	4W300B	2	8BQ5	16
CSJA 10 HF300 4 4X150A 2 9A8/PCF80 18 DM70 18 NF00649 32 4X150D 2 12AT7/ECC81 18 DM71 18 NF00650 32 4X250B 2 12AUT/ECC82 18 DX151 34 OA2 35 4X250F 2 12AXT/ECC83 18 DX184 34 OB2 35 4X500A 2 15CW5/PL84 18 EBOC 20 OG3/85A2 35 4x50A 2 16AQ3/XY88 18 EBOC 20 OG3/85A2 35 4x50D2 2 27GB5/PL500 18 E80C 20 PCF86 16 4-400A 2 45B5/UL84 18 E80L 22 PCF86 16 4-400A 2 45B5/UL84 18 E81L 22 ULB4 18 5CR22 10 5BM8 18 E83 F 22 XF183 12		10						16
DM70								
DMT1								
DX151								
DX184 34 OB2 35 4x500A 2 15CW5/PL84 18 E1T 32 OE3/85A1 35 4x500A 2 16AQ3/XY88 18 E80F 20 PCF80 18 4x50A/5D22 2 27GB5/PL500 18 E80L 22 PCF86 16 4x400A 2 45B5/UL84 18 E80T 20 PL84 18 5AR4/GZ34 12 50AVP 32 E81L 22 UL84 18 5C22 10 50BM8 18 E83 F 22 XF183 12 5D22 2 51UVP 32 E81C 22 XF184 12 5ES8 12 52AVP 32 E90CC 20 XP1010 32 5GJ7 12 53AVP 32 E91H 22 XP1031 32 6AL3/EY88 12 54AVP 32 E92C 20 XY88 18 6AL5						9		
E1T 32 OE3/85A1 35 4-65A 2 16AQS/XY88 18 E80CC 20 OG3/85A2 35 4-125A/4D21 2 17EW8 18 E80F 20 PC 820 18 4-250A/5D22 2 27GB5/PL500 18 E80L 22 PC F86 16 4-400A 2 45B5/UL84 18 E80T 20 PL84 18 5AR4/GZ34 12 50AVP 32 E81L 22 UL84 18 5C2 10 50BM8 18 E83F 22 XF183 12 5D22 2 51UVP 32 E88CC 22 XF184 12 5ES8 12 52AVP 32 E89CC 20 XP1010 32 5GJ7 12 53AVP 32 E90CC 20 XP1030 32 6AJ8 12 53UVP 32 E91H 22 XP1031 32 6AL3/EY88 12 54AVP 32 E92C 20 XY88 18 6AL5 14 55AVP 32 E92C 20 XY88 18 6AL5 14 56AVP 32 E182CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E182CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E182CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E182CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 E182CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 E182CC 32 ZB3200 35 6AT6 14 75NB3-7 24 EA53 24 Z70U 34 6BA6 14 75NB3-7 24 EA53 24 Z70U 34 6BA6 14 75NB3-7 24 EB5E9 14 Z70W 34 6AV6 14 75NB3-9 24 ECC81 18 Z803U 34 6BX/ECF80 14 85A2 35 EC81 22 Z502S 32 6BB8/ECF80 14 85A2 35 EC81 22 Z503M 32 6BM8/ECL82 14 90C1 35 EC81 22 Z503M 32 6BM8/ECL82 14 90C1 35 EC681 18 Z803U 34 6BX6/EF80 14 90NB-4 24 ECC82 18 Z804U 34 6CA7/EL34 14 100CC 24 ECC82 18 Z804U 34 6CA7/EL34 14 100CC 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CC 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CC 24						2		
E80CC 20 OG3/85A2 35 4-125A/4D21 2 17EW8 18 E80F 20 PCF80 18 4-250A/5D22 2 27GB5/PL500 18 E80L 22 PCF86 16 4-400A 2 45B5/UL84 18 E80T 20 PL84 18 5AR4/GZ34 12 50AVP 32 E81L 22 UL84 18 5C22 10 50BM8 18 E83F 22 XF183 12 5D22 2 51UVP 32 E89CC 22 XF184 12 5ES8 12 52AVP 32 E90CC 20 XP1010 32 5GJ7 12 53AVP 32 E90CC 20 XP1030 32 6AJ8 12 5UVP 32 E91H 22 XP1031 32 6AL3/EY88 12 54AVP 32 E92CC 20 XY88 18 6AL5 14 55AVP 32 E99F 20 XY88 18 6AL5 14 55AVP 32 E99F 20 XY88 18 6AL5 14 55AVP 32 E99F 20 XY88 18 6AL5 14 55AVP 32 E99F 20 XY88 18 6AL5 14 55AVP 32 E99F 20 XY88 18 6AL5 14 55AVP 32 E99F 20 XY88 18 6AL5 14 55AVP 32 E99F 20 XY183 12 6AL5W 14 56AVP 32 E98ECC 22 YF184 12 6AQ8/XY88 18 57AVP 32 E182CC 22 YF184 12 6AQ8/XY88 18 57AVP 32 E182CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 E185C 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 E185C 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 E185C 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 E185C 22 ZB3200 35 6AT6 14 75N-7 24 E59F9 14 Z70W 34 6AU6 14 75NB3-9 24 E655 30 Z71U 34 6AU6 14 75NB3-9 24 E655 30 Z71U 34 6AU6 14 75NB3-9 24 EC680 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/ECF80 14 85A2 35 EC81 22 Z502S 32 6BL8/ECF80 14 85A2 35 EC81 22 Z502S 32 6BL8/ECF80 14 90C1 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC686 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC681 18 Z803U 34 6BA6/EF80 14 90NB-4 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100CB 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100CB 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24								
E80F 20 PC F80								
E80L 22 PCF86 16 4-400A 2 45B5/UL84 18 E80T 20 PL84 18 5AR4/GZ34 12 50AVP 32 E81L 22 UL84 18 5C22 10 50BM8 18 E83F 22 XF183 12 5D22 2 51UVP 32 E88CC 22 XF184 12 5ES8 12 52AVP 32 E90CC 20 XP1010 32 5GJ7 12 53AVP 32 E90F 20 XP1030 32 6AJ8 12 53UVP 32 E91H 22 XP1031 32 6AL3/EY88 12 54AVP 32 E92CC 20 XY88 18 6AL5 14 55AVP 32 E99F 20 YF183 12 6AL5W 14 56AVP 32 E99F 20 YF184 12 6AQ3/XY88 18 57AVP 32 E182CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E182CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E182CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 EA52 22 ZZ1000 35 6AT6 14 75N-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EA53 24 Z70W 34 6AV6 14 75NB3-7 24 EA56 22 Z303C 32 6BE6 14 76NB3 24 EC68 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/ECF80 14 85A1 35 EC81 22 Z502S 32 6BM/ECL82 14 90C1 35 EC158 30 Z550M 32 6BM/ECL82 14 90C1 35 EC158 30 Z550M 32 6BM/ECL82 14 90C1 35 EC681 18 Z803U 34 6BX6/EF80 14 90CB 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100C 24 ECC82 18 Z805U 34 6CA7/EL34 14 100C 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CB 24								
E80T 20 PL84 18 5AR4/GZ34 12 50AVP 32 E81L 22 UL84 18 5C22 10 50BM8 18 E83 F 22 XF183 12 5D22 2 51UVP 32 E86CC 22 XF184 12 5ES8 12 5CAVP 32 E90CC 20 XP1010 32 5GJ7 12 53AVP 32 E90F 20 XP1030 32 6AJ8 12 55UVP 32 E91H 22 XP1031 32 6AL3/EY88 12 55AVP 32 E92CC 20 XY88 18 6AL5 14 55AVP 32 E99F 20 YF183 12 6AL5W 14 56AVP 32 E99F 20 YF183 12 6AL5W 14 56AVP 32 E182CC 22 XF184 12 6AQ3/XY88 18 57AVP 32 E182CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 EA52 22 ZZ1000 35 6AT6 14 75NP3 7 24 EA53 24 Z70U 34 6AU6 14 75NP3 7 24 EA53 24 Z70W 34 6AU6 14 75NP3 7 24 EBF89 14 Z70W 34 6AV6 14 75NP3 9 24 EC80 22 ZB3CO 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BM8/ECL82 14 90CB 24 ECC81 18 Z803U 34 6EX6/EF80 14 90CB 24 ECC82 18 Z804U 34 6EX6/EF80 14 100CB 24 ECC83 18 Z803U 34 6CA4/EZ81 14 100CB 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CB 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24								
E81L 22 UL84 18 5C22 10 50BM8 18 E83 F 22 XF183 12 5D22 2 51UVP 32 E88 CC 22 XF184 12 5ES8 12 52AVP 32 E90 CC 20 XP1010 32 5GJ7 12 53AVP 32 E90 F 20 XP1030 32 6AJ8 12 53UVP 32 E91 H 22 XP1031 32 6AL3/EY88 12 54AVP 32 E92 CC 20 XY88 18 6AL5 14 55AVP 32 E99 F 20 YF183 12 6AL5W 14 56AVP 32 E182 CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E182 CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E185 CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E185 C 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 EA52 22 ZZ1000 35 6AT6 14 75N-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EA56 24 Z70W 34 6AV6 14 75NB3-7 24 ESF89 14 Z70W 34 6AV6 14 75NB3-9 24 EC55 30 Z71U 34 6BA6 14 75NB3-9 24 EC68 22 Z303 C 32 6BE6 14 85A1 35 EC81 22 Z502 32 6BL8/ECF80 14 85A2 35 EC88 14 Z503M 32 6BW8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BW8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BW8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BW8/ECL82 14 90C1 35 EC681 18 Z803U 34 6BX6/EF80 14 90NB-4 24 ECC82 18 Z803U 34 6CA4/EZ81 14 100C 24 ECC82 18 Z805U 34 6CA4/EZ81 14 100C 24 ECC83 18 Z805U 34 6CA7/EL34 14 100C 24 ECC83 18 Z805U 34 6CA7/EL34 14 100C 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24								
E83 F 22 XF183 12 5D22 2 51UVP 32 E88 CC 22 XF184 12 5ES8 12 52AVP 32 E90 CC 20 XP1010 32 5GJT 12 53AVP 32 E90 F 20 XP1030 32 6AJ8 12 53UVP 32 E91 H 22 XP1031 32 6AL3/EY88 12 54AVP 32 E92 CC 20 XY88 18 6AL5 14 55AVP 32 E99 F 20 YF183 12 6AL5W 14 56AVP 32 E18 CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E18 CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EB F89 14 Z70W 34 6AV6 14 75NB3-9 24 EC65 30 Z71U 34 6BA6 14 76NB3 24 EC80 22 Z303 C 32 6BE6 14 85A1 35 EC81 22 Z502 S 32 6BE6 14 85A1 35 EC81 22 Z502 S 32 6BE6 14 85A2 35 EC88 14 Z503 M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550 M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550 M 32 6BM8/ECL82 14 90CB 24 ECC82 18 Z804 U 34 6CA4/EZ81 14 100 C ECC82 18 Z805 U 34 6CA7/EL34 14 100 C ECC83 18 Z805 U 34 6CA7/EL34 14 100 C ECC83 18 Z805 U 34 6CA7/EL34 14 100 C ECC83 18 Z805 U 34 6CA7/EL34 14 100 C ECC83 18 Z805 U 34 6CA7/EL34 14 100 C ECC85								
E88CC 22 XF184 12 5ES8 12 52AVP 32 E90CC 20 XP1010 32 5GJT 12 53AVP 32 E90F 20 XP1030 32 6AJ8 12 53UVP 32 E91H 22 XP1031 32 6AL3/EY88 12 54AVP 32 E92CC 20 XY88 18 6AL5 14 55AVP 32 E99F 20 YF183 12 6AL5W 14 56AVP 32 E182CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E188CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 E188CC 22 ZB3200 35 6AT6 14 75N-7 24 EA52 22 ZZ1000 35 6AT6 14 75N-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EBF89 14 Z70W 34 6AV6 14 75NB3-9 24 EC55 30 Z71U 34 6AA6 14 75NB3-9 24 EC68 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/ECF80 14 85A2 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BW8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BV8/ECR81 14 90CB 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100CC 24 ECC83 18 Z804U 34 6CA7/EL34 14 100CB 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24								
E90CC 20 XP1010 32 5GJ7 12 53AVP 32 E90F 20 XP1030 32 6AJ8 12 53UVP 32 E91H 22 XP1031 32 6AL5 14 55AVP 32 E92CC 20 XY88 18 6AL5 14 55AVP 32 E99F 20 YF183 12 6AL5W 14 56AVP 32 E182CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E188CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 EA52 22 ZZ1000 35 6AT6 14 75N-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EBF89 14 Z70W 34 6AV6 14 75NB3-9 24 ECS5 30 Z71U 34 6BA6 14 75NB3-9 24 EC80 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/ECF80 14 85A2 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BQ5/EL84 14 90CB 24 ECC81 18 Z803U 34 6CA4/EZ81 14 100C 24 ECC83 18 Z804U 34 6CA4/EZ81 14 100CB 24 ECC83 18 Z805U 34 6CA4/EL34 14 100CB 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CA7/EL34 14 100CB 24 ECC83 18 Z805U 34 6CA4/EL81 14 100CB 24 ECC83 18 Z805U 34 6CA4/EL34 14 100CB 24 ECC85 14 Z900T							51UVP	
E90 F 20								
E91H 22 XP1031 32 6AL3/EY88 12 54AVP 32 E92CC 20 XY88 18 6AL5 14 55AVP 32 E99 F 20 YF183 12 6AL5W 14 56AVP 32 E182CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E188CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 EA52 22 ZZ1000 35 6AT6 14 75N-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EBF89 14 Z70W 34 6AV6 14 75NB3-9 24 EC55 30 Z71U 34 6BA6 14 76NB3 24 EC80 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/ECF80 14 85A1 35 EC81 22 Z502S 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BM8/ECL82 14 90C1 35 EC61 18 Z803U 34 6BX6/EF80 14 90CB 24 ECC82 18 Z803U 34 6CA4/EZ81 14 100C 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24			XP1010		5GJ7		53AVP	
E92CC 20 XY88 18 6AL5 14 55AVP 32 E99 F 20 YF183 12 6AL5W 14 56AVP 32 E182CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E188CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 EA52 22 ZZ1000 35 6AT6 14 75N-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EBF89 14 Z70W 34 6BA6 14 75NB3-9 24 EC55 30 Z71U 34 6BA6 14 76NB3 24 EC80 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/ECF80 14 85A2 35 EC88 14 Z503M 32 6BQ5/EL84 14 90CB 24 EC081 18 Z803U 34 6CA4/E	E90 F	20	XP1030	32	6AJ8	12	53UVP	32
E99 F 20 YF183 12 6AL5W 14 56AVP 32 E182CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E188CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 EA52 22 ZZ1000 35 6AT6 14 75N-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EBF89 14 Z70W 34 6AV6 14 75NB3-9 24 EC55 30 Z71U 34 6BA6 14 76NB3 24 EC80 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/ECF80 14 85A2 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BM8/ECL82 14 90C1 35 EC31 8 Z803U 34 6BX6/EF80 14 90NB-4 24 EC62 18 Z804U 34 6CA4/EZ81 14 100C 24 EC63 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB	E91H	22	XP1031	32	6AL3/EY88	12	54AVP	32
E99 F 20 YF183 12 6AL5W 14 56AVP 32 E182CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E188CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 EA52 22 ZZ1000 35 6AT6 14 75N-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EBF89 14 Z70W 34 6AV6 14 75NB3-9 24 EC55 30 Z71U 34 6BA6 14 76NB3 24 EC80 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/ECF80 14 85A2 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BM8/ECL82 14 90C1 35 EC31 8 Z803U 34 6BX6/EF80 14 90NB-4 24 EC62 18 Z804U 34 6CA4/EZ81 14 100C 24 EC63 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB	E92CC						55AVP	32
E182CC 22 YF184 12 6AQ3/XY88 18 57AVP 32 E188CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 EA52 22 ZZ1000 35 6AT6 14 75N-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EBF89 14 Z70W 34 6AV6 14 75NB3-9 24 EC55 30 Z71U 34 6BA6 14 76NB3 24 EC80 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/EC F80 14 85A2 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BQ5/EL84 14 90CB 24 EC281 18 Z803U 34 6BX6/EF80 14 90NB-4 24 EC62 18 Z804U 34	E99 F					14		
E188CC 22 ZB3200 6 6AQ8/ECC85 14 58AVP 32 EA52 22 ZZ1000 35 6AT6 14 75N-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EBF89 14 Z70W 34 6AV6 14 75NB3-9 24 EC55 30 Z71U 34 6BA6 14 76NB3 24 EC80 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/EC F80 14 85A2 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BQ5/EL84 14 90CB 24 ECC81 18 Z803U 34 6BX6/EF80 14 90NB-4 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100CB 24 ECC85 14 Z900T 34								
EA52 22 ZZ1000 35 6AT6 14 75N-7 24 EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EBF89 14 Z70W 34 6AV6 14 75NB3-9 24 EC55 30 Z71U 34 6BA6 14 76NB3 24 EC80 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/EC F80 14 85A2 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BQ5/EL84 14 90CB 24 ECC81 18 Z803U 34 6BX6/EF80 14 90NB-4 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100CB 24 ECC83 18 Z805U 34 6CA7/EL34 14 100HB 24								
EA53 24 Z70U 34 6AU6 14 75NB3-7 24 EBF89 14 Z70W 34 6AV6 14 75NB3-9 24 EC55 30 Z71U 34 6BA6 14 76NB3 24 EC80 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/EC F80 14 85A2 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BQ5/EL84 14 90CB 24 ECC81 18 Z803U 34 6BX6/EF80 14 90NB-4 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100CB 24 ECC83 18 Z805U 34 6CA7/EL34 14 100HB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24	-							
EBF89 14 Z70W 34 6AV6 14 75NB3-9 24 EC55 30 Z71U 34 6BA6 14 76NB3 24 EC80 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/EC F80 14 85A2 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BQ5/EL84 14 90CB 24 ECC81 18 Z803U 34 6BX6/EF80 14 90NB-4 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100C 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24								
EC55 30 Z71U 34 6BA6 14 76NB3 24 EC80 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/EC F80 14 85A2 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BQ5/EL84 14 90CB 24 EC61 18 Z803U 34 6BX6/EF80 14 90NB-4 24 EC62 18 Z804U 34 6CA4/EZ81 14 100C 24 EC63 18 Z805U 34 6CA7/EL34 14 100CB 24 EC65 14 Z900T 34 6CD7/EM34 18 100HB 24								
EC80 22 Z303C 32 6BE6 14 85A1 35 EC81 22 Z502S 32 6BL8/EC F80 14 85A2 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BQ5/EL84 14 90CB 24 EC081 18 Z803U 34 6BX6/EF80 14 90NB-4 24 EC082 18 Z804U 34 6CA4/EZ81 14 100C 24 EC083 18 Z805U 34 6CA7/EL34 14 100CB 24 EC085 14 Z900T 34 6CD7/EM34 18 100HB 24								
EC81 22 Z502S 32 6BL8/EC F80 14 85A2 35 EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BQ5/EL84 14 90CB 24 ECC81 18 Z803U 34 6BX6/EF80 14 90NB-4 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100C 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24								
EC88 14 Z503M 32 6BM8/ECL82 14 90C1 35 EC158 30 Z550M 32 6BQ5/EL84 14 90CB 24 ECC81 18 Z803U 34 6BX6/EF80 14 90NB-4 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100C 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24								
EC158 30 Z550M 32 6BQ5/EL84 14 90CB 24 ECC81 18 Z803U 34 6BX6/EF80 14 90NB-4 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100C 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24								
ECC81 18 Z803U 34 6BX6/EF80 14 90NB-4 24 ECC82 18 Z804U 34 6CA4/EZ81 14 100C 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24								
ECC82 18 Z804U 34 6CA4/EZ81 14 100C 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24	EC158		Z550M	32	6BQ5/EL84	14	90CB	
ECC82 18 Z804U 34 6CA4/EZ81 14 100C 24 ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24	ECC81	18	Z803 U	34	6BX6/EF80	14	90NB-4	24
ECC83 18 Z805U 34 6CA7/EL34 14 100CB 24 ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24	ECC82	18		34			100C	24
ECC85 14 Z900T 34 6CD7/EM34 18 100HB 24					1			
TO THE PERSON AND THE	ECC86	16	1M3/DM70	18	6CM4	14	100LB	24

100N	Type No.	Page	Type No.	Page	Type No.	Page	Type No.	Page
120C	100N	24	891	6	6159	2		22
120C	100NB	24	891R	6	6201	20	7537	33
120N		24		6		20	7580	4
150AVP 30				6	6218/E80T	20	7609	4
150 150							7643	20
150P2								4
150CVP 32								20
150N								20
150 NB								24
152AVP 32 5552-A								34
153AVP								
153C	_							34
155N								34
190G			5555/653B	34		35		34
171G	155N	24	5557/1701	10	63 60	4		34
200C	160G	26	5559	10	63 60 A	4		22
200C	171G	26	5560/FG95	10	6370/E1T	32	7753	8
200CB		26		35	6445		7788	22
2001 B 26						8	7800	8
200LB								8
200 N								8
200NB								8
240N 26								8
249B 30								
SOUNC 26								4
310C	249B		5658	6				8
311PC 26 5684/C3JA 10 6688 22 7986 312PC 26 5685/C6JA 10 6688A 22 8008-AX 315PC 26 5726 18 6689/E83F 22 8020-AX 356 6 5727 10 6689 30 8042 400PC 26 5759/501R 6 6756 8 8078 500N 26 5771 6 6755 8 8108 501R 6 5822A 34 6758 8 8116 501R 6 5822A 34 6759 8 8117 502R 6 5847 20 6786 10 8119 504R 6 5847 20 6800 8 8120 505N 26 5861/EC55 30 6801 8 8177 506N 26 5866 6 6883 4 8179 507N 26 5867 6 6907 4 8228/ZZ1000 575-A 30 5867A 6 6922/E88CC 22 8233 632B 10 5868 6 6923/EA52 22 8254 653B 34 5869/AGR9950 10 6939 4 8268 673 30 5870/AGR9951 10 6960 8 8269 805 6 5804 2 6977 32 18508 807 2 5895 2 6975 34 8278 810 6 5911 12 6977 32 18504 811A 6 5913 12 6977 32 18504 811A 6 5920/E90CC 20 7025 18 18508 813 2 5923 6 7062 22 18508 828 2 5924A 6 7091 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 833A 6 6007/5913 12 7092 35 18508 834A 6 6008/5911 12 7093 35 18510 835 6 6078 2 7118/E182CC 22 18516 845 6 6078 8 7237 8 1852C 846-AX 30 6083 2 7308/E188CC 22 18526 866-B 30 608/E80CC 20 7316 20 18536	300 PC	26	5666	6	6686/E81L		7900	8
S12 PC	310C	26	5667	6	6687/E91H	22	7983	4
312 PC 26 5685/C6JA 10 6688A 22 8008-AX 315 PC 26 5726 18 6689/E83 F 22 8020-AX 356 6 5727 10 6689 30 8042 400 PC 26 5759/501R 6 6756 8 8078 500N 26 5771 6 6757 8 8108 501R 6 5822 A 34 6758 8 8116 502 6 5823/Z900T 34 6759 8 8117 502R 6 5842 20 6786 10 8119 504R 6 5847 20 6800 8 8120 505N 26 5866 6 6883 4 8177 506N 26 5866 6 6 6883 4 8177 506N 26 5866 6 6 6883 4 8177 506N 26 5866 6 6 6883 4 8177 507N 26 5867 6 6907 4 8228/Z21000 575-A 30 5867A 6 6922/E88CC 22 8233 562B 10 5868 6 6 6923/EA52 22 8254 653 B 34 5869/AGR9950 10 6939 4 8268 673 30 5870/AGR9951 10 6960 8 8269 805 6 5894 2 6961 8 8270 805 811A 6 5913 12 6977 32 18503 811A 6 5913 12 6979 4 18504 812A 6 5920/E90CC 20 7025 18 18506 813 18506 813 2 5923 6 7062 22 18506 813 12 6979 4 18504 8130 828 25924 6 7090 35 18508 829B 2 5924A 6 7090 35 18508 833 6 6007/5913 12 7092 8 18508 833A 6 6007/5913 12 7092 8 18508 833A 6 6007/5913 12 7092 8 18508 829B 2 5924A 6 7090 35 18508 833A 6 6007/5913 12 7092 8 18515 833 6 6007/5913 12 7092 8 18516 833 6 6007/5913 12 7092 8 18516 833 6 6007/5913 12 7092 8 18516 833 6 6007/5913 12 7092 8 18516 833 6 6007/5913 12 7092 8 18516 833 6 6007/5913 12 7092 8 18516 833 6 6007/5913 12 7092 8 18516 833 6 6007/5913 12 7092 8 18516 833 6 6007/5913 12 7092 8 18516 833 6 6007/5913 12 7092 8 18516 833 6 6007/5913 12 7092 8 18516 833 6 6007/5913 12 7092 8 18516 835 6 6076 2 7119/E182CC 22 18566 845 6 6076 2 7116 6008/5911 12 7093 35 18516 845 6 6076 2 7116 6008/5911 12 7093 35 18516 845 6 6076 2 7116 6008/5911 12 7093 35 18516 845 6 6076 2 7116 6008/5911 12 7093 35 18516 845 6 6076 2 7116 6008/5911 12 7093 35 18516 845 6 6076 2 7116 6008/5911 12 7093 35 18516 845 6 6076 2 7116 6008/5911 12 7093 35 18516 845 6 6076 2 7116 6008/5911 12 7093 35 18516 845 6 6076 2 7116 6008/5911 12 7093 35 18516 845 6 6076 2 7116 6008/5911 12 7093 35 18516 845 6 6076 2 7116 6008/5911 12 7093 35 18516 845 6 6008/5911 12 7093 35 18516 845 6 6008/5911 12 7093 35 18516 845 6 6008/5911 12 7093 35 18516 845 6 6008/5911 12 7093 35 18516 845 6 6008/5911 12 7093 35 1	311 PC	26	5684/C3JA	10	6688	22	7986	6
315PC 26 5726 18 688/E83F 22 8020-AX 356 6 5727 10 6693 30 8042 400PC 26 5759/501R 6 6756 8 8078 500N 26 5711 6 6757 8 8108 501R 6 5822A 34 6753 8 8116 502 6 5823/Z990T 34 6759 8 81117 502R 6 5842 20 6786 10 8119 504R 6 5847 20 6800 8 8120 505N 26 5866 6 6833 4 8177 506N 26 5866 6 6 6883 4 8177 506N 26 5866 6 6 6883 4 8179 507N 26 5866 6 6 6883 4 8179 507N 26 5866 6 6 6883 4 8179 507N 26 5867A 6 6922/E88CC 22 8233 632B 10 5868 6 6923/EA52 22 8254 653B 34 5869/AGR9950 10 6939 4 8268 673 30 5867A 6 6922/E88CC 22 8253 673 30 5870/AGR9951 10 6960 8 8268 673 80 5870/AGR9951 10 6960 8 8269 805 6 5894 2 6961 8 8270 807 2 5895 2 6975 34 8278 810 6 5911 12 6977 32 18503 811A 6 5913 12 6977 32 18503 811A 6 5913 12 6979 4 18504 812A 6 5920/E90CC 20 7025 18 18504 828 22B 2 5924 6 7090 35 18506 828 2 5924 6 7090 35 18506 828 2 5924 6 7090 35 18506 833 6 6007/5913 12 7092 8 18510 834 6 6007/5913 12 7092 8 18510 836 834 6 6007/5913 12 7092 8 18510 836 836 6 6007/5913 12 7092 8 18510 836 836 6 6007/5913 12 7092 8 18510 836 836 6 6007/5913 12 7092 8 18510 836 836 6 6007/5913 12 7092 8 18510 836 836 836 836 836 836 836 836 836 836	312 PC				6688A	22	8008-AX	30
356 6 6 5727 10 6693 30 8042 400PC 26 5759/501R 6 6756 8 8078 500N 26 5771 6 6756 8 8078 501R 6 5822A 34 6758 8 8116 502 6 5823/2900T 34 6759 8 8116 502R 6 5842 20 6786 10 8119 504R 6 5847 20 6800 8 8120 505N 26 5866 6 6883 4 8177 506N 26 5866 6 6 6883 4 8177 507N 26 5866 6 6 6883 4 8177 507N 26 5867 6 6922/E88CC 22 8233 632B 10 5868 6 6922/E48C 22 8234 632B 34 5869/AGR9950 10 6939 4 8268 673 30 5870/AGR9951 10 6960 8 8269 805 6 5894 2 6961 8 8270 807 2 5895 2 6975 34 8270 807 2 5895 2 6975 34 8278 810 6 5911 12 6977 32 18503 811A 6 5913 12 6979 4 18504 812A 6 5920/E90CC 20 7025 18 18503 811A 6 5913 12 6979 4 18504 812B 2 5924 6 7090 35 18509 828 2 5924 6 7090 35 18509 833A 6 6 6007/5913 12 7092 8 18510 834 6 6008/5911 12 7092 8 18510 834 6 6008/5911 12 7092 8 18510 834 6 6008/5911 12 7092 8 18510 834 6 6008/5911 12 7092 8 18510 834 6 6008/5911 12 7092 8 18510 834 6 6008/5911 12 7092 8 18510 834 6 6008/5911 12 7092 8 18510 834 6 6008/5911 12 7092 8 18510 834 6 6008/5911 12 7092 8 18510 834 6 6008/5911 12 7092 8 18510 835 6 6075 2 7119/E182CC 22 18516 845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518 849 6 6077 8 7189 18 18518							8020-AX	30
## 400 PC								4
500N 26 5771 6 6757 8 8108 501R 6 5822A 34 6758 8 8116 502 6 5823/2900T 34 6759 8 8117 502R 6 5842 20 6786 10 8119 504R 6 5847 20 6800 8 8120 505N 26 5866 6 6883 4 8179 506N 26 5866 6 6883 4 8179 507N 26 5867 6 6907 4 8228/ZZ1000 575-A 30 5867A 6 6922/E88CC 22 8234 632B 10 5868 6 6922/E88C2 22 8234 63B 34 5869/AGR9950 10 6939 4 9268 673 30 5870/AGR9951 10 6960 8 8269 <								8
501R 6 5822A 34 6758 8 8116 502 6 5823/Z900T 34 6758 8 8117 502R 6 5843/Z900T 34 6758 8 8117 504R 6 5847 20 6800 8 8120 505N 26 5861/EC55 30 6801 8 8177 506N 26 5867 6 6883 4 8177 507N 26 5867 6 6907 4 8228/ZZ1000 575-A 30 5867 6 6927/E88CC 22 8233 632B 10 5868 6 6923/EA52 22 8254 653B 34 5869/AGR9950 10 6939 4 8268 673 30 5870/AGR9951 10 6960 8 8269 805 6 5894 2 6975 34 8278								30
502 6 5822/Z900T 34 6759 8 8117 502R 6 5842 20 6786 10 8119 504R 6 5847 20 6800 8 8120 505N 26 3861/EC55 30 6801 8 8177 506N 26 5866 6 6833 4 8179 507N 26 5867A 6 6927/E88CC 22 8233 632B 10 5868 6 6922/E88CC 22 8233 632B 10 5868 6 6923/EA52 22 8254 653B 34 5869/AGR9950 10 6960 8 8268 673 30 5870/AGR9951 10 6960 8 8268 673 30 5870/AGR9951 10 6960 8 8270 807 2 5895 2 6975 34 8278 <tr< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>4</td></tr<>								4
502R 6 5842 20 6786 10 8119 504R 6 5847 20 6800 8 8120 505N 26 3861/EC55 30 6801 8 8177 506N 26 5866 6 6883 4 8179 507N 26 5867A 6 6907 4 8228/ZZ1000 575-A 30 5867A 6 6922/E88CC 22 8233 632B 10 5868 6 6923/EA52 22 8254 653B 34 5869/AGR9950 10 6939 4 8268 673 30 5870/AGR9951 10 6939 4 8268 807 2 5894 2 6961 8 8270 807 2 5895 2 6975 34 8278 810 6 5911 12 6977 32 18504 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>								
504R 6 5847 20 6800 8 8120 505N 26 5861/EC55 30 6801 8 8177 506N 26 5866 6 6883 4 8179 507N 26 5867 6 6907 4 8228/ZZ1000 575-A 30 5867A 6 6907 4 8228/ZZ1000 575-A 30 5868A 6 6923/EA52 22 8233 632B 10 5868 6 6923/EA52 22 8254 653B 34 5869/AGR9950 10 6939 4 8268 673 30 5870/AGR9951 10 6960 8 8268 673 30 5870/AGR9951 10 6960 8 8269 805 6 5894 2 6961 8 8270 807 2 5895 2 6975 34 8278 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>4</td></t<>								4
505N 26 3861/EC55 30 6801 8 8177 506N 26 5866 6 6883 4 8179 507N 26 5867 6 6907 4 8228/ZZ1000 575-A 30 5867A 6 6922/E88CC 22 8233 632B 10 5868 6 6923/EA52 22 8254 653B 34 5869/AGR9950 10 6939 4 8268 673 30 5870/AGR9951 10 6960 8 8269 805 6 5894 2 6961 8 8270 807 2 5895 2 6975 34 8278 810 6 5911 12 6977 32 18503 811A 6 5913 12 6979 4 18504 813 2 5924 6 7092 18 18505 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td>8</td></td<>							_	8
506N 26 5866 6 6883 4 8179 507N 26 5867 6 6907 4 8228/ZZ1000 575-A 30 5867A 6 6922/E88CC 22 8233 632B 10 5868 6 6923/EA52 22 8254 653B 34 5869/AGR9950 10 6939 4 8268 673 30 5870/AGR9951 10 6960 8 8269 805 6 5894 2 6961 8 8270 807 2 5895 2 6975 34 8278 810 6 5911 12 6977 32 18503 811A 6 5913 12 6979 4 18504 812A 6 5920/E90CC 20 7025 18 18505 813 2 5923 6 7062 22 18506 <								8
507N 26 5867 6 6907 4 8228/ZZ1000 575-A 30 5867A 6 6922/E88CC 22 8233 632B 10 5868 6 6923/EA52 22 8254 653B 34 5869/AGR9950 10 6939 4 8268 673 30 5870/AGR9951 10 6960 8 8269 805 6 5894 2 6961 8 8270 807 2 5895 2 6975 34 8278 810 6 5913 12 6977 32 18503 811A 6 5913 12 6979 4 18504 812A 6 5920/E90CC 20 7025 18 18505 813 2 5923 6 7062 22 18506 828 2 5924A 6 7090 35 18508			5861/EC55	30				4
575-A 30 5867A 6 6922/E88CC 22 8233 632B 10 5868 6 6923/EA52 22 8254 653B 34 5869/AGR9950 10 6939 4 8268 673 30 5870/AGR9951 10 6960 8 8269 805 6 5894 2 6961 8 8270 807 2 5895 2 6975 34 8278 810 6 5911 12 6977 32 18503 811A 6 5913 12 6979 4 18504 812A 6 5920/E90CC 20 7025 18 18505 813 2 5923 6 7062 22 18506 828 2 5924A 6 7090 35 18508 829B 2 5924A 6 7091 35 18508 8	506N	26	5866	6	6883	4		4
632B	507N	26	5867	6	6907	4	8228/ZZ1000	35
632B	575-A	30	5867A	6	6922/E88CC	22	8233	20
653 B 34 5869/AGR9950 10 6939 4 8268 673 30 5870/AGR9951 10 6960 8 8269 805 6 5894 2 6961 8 8270 807 2 5895 2 6975 34 8278 810 6 5911 12 6977 32 18503 811A 6 5913 12 6979 4 18504 812A 6 5920/E90CC 20 7025 18 18505 813 2 5923 6 7062 22 18506 828 2 5924 6 7090 35 18508 829B 2 5924A 6 7091 35 18509 833A 6 6007/5913 12 7092 8 18510 834 6 6075 2 7119/E182CC 22 18516 845 6 6075 2 7119/E182CC 22 18516 849A<	632B	10		6		22	8254	24
673 30 5870/AGR9951 10 6960 8 8269 805 6 5894 2 6961 8 8270 807 2 5895 2 6975 34 8278 810 6 5911 12 6977 32 18503 811A 6 5913 12 6979 4 18504 812A 6 5920/E90CC 20 7025 18 18505 813 2 5923 6 7062 22 18506 828 2 5924 6 7090 35 18508 829B 2 5924A 6 7090 35 18508 829B 2 5924A 6 7091 35 18509 833A 6 6007/5913 12 7092 8 18510 834 6 6008/5911 12 7093 35 18515 838 6 6075 2 7119/E182CC 22 18516 845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18536 869-B 30 6084/E80 F 20 7316 20 18536 869-B 30 6085/E80CC 20 7377 4 18546		34						8
805 6 5894 2 6961 8 8270 807 2 5895 2 6975 34 8278 810 6 5911 12 6977 32 18503 811A 6 5913 12 6979 4 18504 812A 6 5920/E90CC 20 7025 18 18505 813 2 5923 6 7062 22 18506 828 2 5924 6 7090 35 18508 829B 2 5924A 6 7091 35 18509 833A 6 6007/5913 12 7092 8 18510 834 6 6075 2 7119/E182CC 22 18516 845 6 6075 2 7119/E182CC 22 18516 849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18536								8
807								10
810 6 5911 12 6977 32 18503 811A 6 5913 12 6979 4 18504 812A 6 5920/E90CC 20 7025 18 18505 813 2 5923 6 7062 22 18506 828 2 5924 6 7090 35 18508 829B 2 5924A 6 7091 35 18509 833A 6 6007/5913 12 7092 8 18510 834 6 6008/5911 12 7093 35 18515 838 6 6075 2 7119/E182CC 22 18516 845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 857-B 30 6078 8 7237 8 1852 866-AX 30 6083 2 7308/E188CC 22 18536 869-B 30 6084/E80F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546<						-		18
811A 6 5913 12 6979 4 18504 812A 6 5920/E90CC 20 7025 18 18505 813 2 5923 6 7062 22 18506 828 2 5924 6 7090 35 18508 829B 2 5924A 6 7091 35 18509 833A 6 6007/5913 12 7092 8 18510 834 6 6008/5911 12 7093 35 18515 838 6 6075 2 7119/E182CC 22 18516 845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18536 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 1854								26
812A 6 5920/E90CC 20 7025 18 18505 813 2 5923 6 7062 22 18506 828 2 5924 6 7090 35 18508 829B 2 5924A 6 7091 35 18509 833A 6 6007/5913 12 7092 8 18510 834 6 6008/5911 12 7093 35 18515 838 6 6075 2 7119/E182CC 22 18516 845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546								26
813 2 5923 6 7062 22 18506 828 2 5924 6 7090 35 18508 829B 2 5924A 6 7091 35 18509 833A 6 6007/5913 12 7092 8 18510 834 6 6008/5911 12 7093 35 18515 838 6 6075 2 7119/E182CC 22 18516 845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546								26
828 2 5924 6 7090 35 18508 829B 2 5924A 6 7091 35 18509 833A 6 6007/5913 12 7092 8 18510 834 6 6008/5911 12 7093 35 18515 838 6 6075 2 7119/E182CC 22 18516 845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546								
829B 2 5924A 6 7091 35 18509 833A 6 6007/5913 12 7092 8 18510 834 6 6008/5911 12 7093 35 18515 838 6 6075 2 7119/E182CC 22 18516 845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546								26
833A 6 6007/5913 12 7092 8 18510 834 6 6008/5911 12 7093 35 18515 838 6 6075 2 7119/E182CC 22 18516 845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546			5924					28
834 6 6008/5911 12 7093 35 18515 838 6 6075 2 7119/E182CC 22 18516 845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546	829B	2	5924A		7091			28
838 6 6075 2 7119/E182CC 22 18516 845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546	833A	6	6007/5913	12	7092			28
838 6 6075 2 7119/E182CC 22 18516 845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546	834	6	6008/5911	12	7093	35	18515	28
845 6 6076 2 7136 30 18517 849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546		6			7119/E182CC	22	18516	28
849 6 6077 8 7189 18 18518 849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546		6			7136	30	18517	28
849A 6 6078 8 7237 8 18522 857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546						18		28
857-B 30 6079 2 7292 35 18526 866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546								28
866-AX 30 6083 2 7308/E188CC 22 18529 869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546								28
869-B 30 6084/E80 F 20 7316 20 18536 869-BL 30 6085/E80CC 20 7377 4 18546								28
869-BL 30 6085/E80CC 20 7377 4 18546								28
872-AX 30 6146 2 7378 4 18550								28
			6146					28
880 6 6155 2 7459 8 55125							1	35
889A 6 6156 2 7527 4 55340			6156	2	7527	4	55340	33
889RA 6	889RA	6			I		I	



Amperex Electronic Corporation, Hicksville, Long Island, New York Sales Offices, Applications Laboratories and Tube Manufacturing Plant



Amperex Semiconductor Manufacturing Plant Slatersville, Rhode Island



Ampeerx Semiconductor Manufacturing Plant Cranston, Rhode Island

In line with the grawth, camplexity and new applications of electronics, The AMPEREX ELECTRONIC CORP. research laboratories are continuously improving existing tubes and semiconductors, and developing new types.

Facilities for research and study of glass technalogy, metallurgy, chemistry, salid state physics, radiation detection, high valtage phenameno, etc. ore utilized far the purpose of incorporating these improvements.

A madern, well-equipped Application Engineering Deportment is also avoiloble for the assistance of our customers who are concerned with circuit and application problems relating to tubes and semiconductors.

The lotest production techniques and "know-haw" are applied to the monufacture of AMPEREX products which, for over 35 years, have achieved a reputation far reliability of perfarmance and long life.

Cable Address — "AMPRONICS, NEW YORK"
Phone — 516 WElls 1-6200
TWX — HICKSVILLE, N. Y. 2199